

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

ENVIRONMENTAL RESOURCES ELIMINATED FROM FURTHER DETAILED ANALYSIS

Effects on several environmental resources were examined and found to be negligible or nonexistent. These resources and the reasons they were eliminated from further detailed analysis are discussed below. These resources are seismicity/earthquakes/subsidence, land use/population/housing, agriculture, regional economics, public services, paleontological resources, Wild and Scenic Rivers, Indian trust assets, and environmental justice.

Seismicity, Earthquakes, and Subsidence

The project site is not located in any fault zone of the Alquist–Priolo Earthquake Faulting Zoning Map issued by the California Department of Conservation, Division of Mines and Geology. No active faults or splays were identified on-site or in the project vicinity that could expose people or structures to hazards associated with fault rupture (EDAW 2005)

The possibility for hazard from subsidence is very low around the project area because the conditions required for many of the subsidence processes do not exist.

Land Use, Population, and Housing

The proposed action and alternative sites are located in land use areas designated for recreation and natural preserve by the Sacramento County General Plan (Sacramento County, 1993), and the Folsom Lake State Recreation Area General Plan (1979). Implementation of the proposed action and alternatives would result in continued use of the project area for recreational and natural preserve land uses.

No residential or commercial land uses are located at the proposed sites. With implementation of the proposed action, no new housing would be developed, and no existing housing or people would be displaced. No conflict with land use plans would occur. Therefore, no impacts to existing or planned land uses would result from construction and operation of the proposed action and alternatives.

Agricultural Resources

The proposed action and alternative sites are located in land use areas designated for recreation and natural preserve by the Sacramento County General Plan. The project area is located in an urban area that contains a mixture of single-family residential, multi-family residential and commercial uses.

Implementation of the proposed action and alternatives would result in continued recreational and natural preserve land uses in the project area. No agricultural uses exist in the project vicinity. The project would not directly or indirectly affect agricultural operations.

Regional Economics

The proposed action and alternatives would have no effect on regional economics.

Paleontological Resources

The project would not affect unique paleontological resources or geologic features. Gravel would be extracted from above ground dredger tailings, and no excavation would take place. Spawning habitat improvements would involve some redistribution of gravel within the American River; however, this gravel is subject to erosion and periodic shifts during high water events and does not represent fossil-bearing geologic formations. The side channels would be excavated to 1.0 to 2.5 feet in depth in areas that are part of the historical meander belt, and the underlying bedrock would not be penetrated.

Wild and Scenic Rivers

The LAR is designated as a Recreational River by the Secretary of Interior under the National Wild and Scenic Rivers Act and is given the same designation by the State under the State Wild and Scenic system. The proposed project will not have a direct and adverse effect on the values for which the river was designated (National Park Service, 2008).

Indian Trust Assets

Indian trust assets (ITAs) are legal interests in property held in trust by the United States for Indian tribes or individuals. The Secretary of the Interior, acting as the trustee, holds many assets in trust for Indian tribes or Indian individuals. Examples of trust assets include lands, minerals, hunting and fishing rights, and water rights. Although most ITAs are on reservation lands, off-reservation ITAs also exist.

The United States has an Indian Trust responsibility to protect and maintain rights reserved by or granted to Indian tribes or Indian individuals by treaties, statutes, and executive orders. These rights are sometimes further interpreted through court decisions and regulations. The proposed action would not affect any ITAs because the closest one is the Shingle Springs Rancheria about 17 miles away.

Environmental Justice

Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. The proposed action would not result in any adverse human health or environmental effects to minority or low-income populations.

APPROACH

The difference between the proposed action and the alternative being considered in this EA is the source of the gravel for Gravel Augmentation Sites 2, 3, 4, and 5. The location of the gravel source is not a factor in determining the environmental consequences of many resource areas (e.g. hydrology). Therefore, the effects of implementing the alternative are only separately

identified from the proposed action where applicable.

HYDROLOGY

Affected Environment

Flows in the LAR are controlled by the releases from Nimbus Dam and vary significantly by season and by years. Water that is stored in upstream reservoirs (primarily Folsom Reservoir) during the winter and spring is released in the summer and fall for municipal and industrial supply, irrigation, water quality, power generation, recreation, and fish and wildlife purposes. Consequently the flows are now lower in the winter and spring and higher in the summer and fall than they were prior to the building of the dams and reservoirs

The water surface elevation upstream and down stream of a riffle is important to the suitability of the riffle for spawning and incubation of salmonids. The surface elevation of the LAR is controlled by riffles, and in the case of Site 1, the hatchery diversion structure. The water surface elevation at Sites 2 and 3 and side channel Site 2 is controlled by the riffle just below Site 3. The water elevation at Sites 4, 5 and 6 and side channel Site 3 is controlled by the riffle adjacent to the island in Upper Sunrise Park. This riffle has recently down cut and the side channel is no longer watered at typical winter flows. The elevation of the river at site 7 is controlled by Arden Rapids.

At the location of the side channel at Site 2, the river historically followed the bluff on the north side of the river. Between 1937 and 1957 a bar was formed (now called Sailor Bar) and the river moved to the south (Fairman, 2007). The proposed side channel would follow the old channel alignment a portion of its length, and then move south to the river. The water level at the entrance of the side channels would be controlled by the riffle at Sailor Bar.

Environmental Consequences

NO ACTION ALTERNATIVE

The No Action Alternative would not involve any changes to the existing hydrology of the LAR.

PROPOSED ACTION

The hydrologic effects of the proposed actions are limited to changes in water surface elevations resulting from the introduction of the gravel and redirection of some flow from the main river down the proposed side channels. All these effects would take place in the 2-mile section of river downstream of Nimbus Dam and the long pool upstream of Arden Rapids.

For gravel augmentation and side channel sites designed using the SHIRA method, the models used provide information on the changes in water surface elevation, bottom configurations, and water velocities.

For sites designed using the Stockpile Injection method, the anticipated changes in surface elevation, bottom configuration, and water velocities would be less certain. Although an initial condition could be described, how the gravel is distributed over time is much more speculative.

Site 1 and Side Channel Site 1

The hydrologic effects of restoring Site 1 will be determined subsequent to the final design of the removal of the hatchery diversion structure. With the diversion structure removed, the gradient in this section of the river will be increased and the tailwater elevation below Nimbus dam decreased. When gravel is placed at this site, there will be a slight increase in the tailwater elevation, but probably not to the level before the diversion structure was removed. The effect of the side channel across Nimbus Shoals would tend to lower the tailwater elevation.

Sites 2 and 3 and Side Channel Site 2

Because of their proximity and interdependence, Sites 2 and 3, and the side channel at Site 2 have been designed as a unit using the SHIRA method. The model output shows that placing the gravel in the river and constructing the side channel would increase the upstream pool elevation by about one foot when river flows are at 2,000 cfs. At higher river flows the incremental increase in pool elevation would be less.

Sites 4 and 5

Although Sites 4 and 5 have yet to be designed, the width of the river at these sites is similar to the width at Sites 2 and 3. Consequently, the increase in pool elevation upstream of the sites is expected to be about one foot when the river flow is 2,000 cfs.

Site 6 and Side Channel Site 3

These sites are in a state of instability and further analysis is needed to determine the best way of restoring the side channel and/or improving the spawning conditions in the riffle. A preliminary analysis identified three potential options: (1) Augment gravel at the riffle crest and potentially force water into the side channel at lower river flows; (2) Augment gravel through the entire riffle to the area of deposition; and (3) Excavate the side channel. The group concluded that Option 1 was tenuous, at best; Option 2 could be more sustainable; and Option 3 the most preferred (PWA, 2007). With Options 1 and 2, the upstream pool elevation would be increased, although the condition might be short lived. With Option 3, the pool elevation would be decreased.

Site 7

The water elevation at Site 7 is controlled by Arden Rapids. Adding gravel at this site will likely slightly increase the water elevation upstream of the site.

ALTERNATIVE ACTION

The environmental consequences are the same as the proposed action.

CUMULATIVE EFFECTS

The cumulative hydrologic effects are the changes in hydrologic conditions as a result of the proposed project and of other projects affecting river hydrology. Other projects planned or underway upstream of Arden Rapids include: the Lower Sunrise Side Channel Project, the Modification of the Nimbus Salmon and Steelhead Fish Ladder, and the Widening of the Hazel Avenue Bridge. None of these projects affect the amount of flow in the river.

WATER QUALITY

State and federal law mandates a series of programs for the management of surface water quality. In the State of California, water resources are protected under the federal Clean Water Act (CWA) and the State Porter-Cologne Water Quality Control Act, which created the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). Each RWQCB is responsible for preparing and updating a water-quality control plan (basin plan) every three years; the basin plan for a specific region identifies water quality protection policies and procedures for that region (California RWQCB, 1998).

In the project area, the Central Valley RWQCB is responsible for designating beneficial uses for waters of the American and Sacramento River basins and the Delta that are protected by a range of Central Valley RWQCB programs that specify waste discharge requirements for discharges of wastes to land or water and authorize discharges under the National Pollution Discharge Elimination System permitting process, pursuant to the federal CWA with oversight by the U.S. Environmental Protection Agency (EPA).

The Central Valley RWQCB also establishes water quality objectives for the American and Sacramento River basins and the Sacramento–San Joaquin Delta intended to support the protection of beneficial uses.

Reclamation would construct the project in accordance with the following permits that are protective of water quality: a Clean Water Act §401 Certification issued by the Regional Water Quality Control Board; and a Clean Water Act §404 Permit issued by the U.S. Army Corps of Engineers. As a federal agency, Reclamation is not required to obtain a California Fish and Game Code Section 1602 Stream Alterations Agreement issued by the California Department of Fish and Game (Hobgood, 2008). However Reclamation will continue to work closely with the Department of Fish and Game to protect the aquatic resources of the river.

Affected Environment

The American River system supports a number of beneficial uses along its three main forks and many tributaries and is generally considered an excellent source of high-quality water. Water from the American River watershed is suitable for all existing beneficial uses, including: municipal supply, contact and non-contact recreation, agricultural and industrial supply, warm-water and cold-water fish habitat (including anadromous fish migration and spawning habitat), and wildlife habitat. Waters from the upper watershed generally have excellent quality with regard to mineral and nutrient content and low concentrations of total dissolved solids (TDS).

The Sacramento Coordinated Monitoring Program (CMP) has routinely monitored the LAR for heavy metals content and for compliance with conventional water-quality parameters. Monitoring has shown that water quality generally meets ambient water-quality criteria for aquatic life protection. Specifically, CMP data for the 1992–1995 monitoring period indicate a mean total suspended solids (TSS) content of <1 mg/L (milligrams per liter), mean electrical conductivity (EC) of 52 microSiemens per centimeter ($\mu\text{S}/\text{cm}$), and a hardness of CaCO_3 of 25 mg/L (Sacramento County Water Agency 1995). Nevertheless, through its Resolution No. 98-055 (1998) and its CWA Section 303(d) efforts, SWRCB named the LAR as impaired because of group “A” pesticides, mercury, and unknown toxicity and assigned low, medium, and low priority rankings, respectively, for the development of corresponding total maximum daily load (TMDL) programs (Corps et al. 2002).

Environmental Consequences

NO ACTION ALTERNATIVE

Under the No Action Alternative, the existing conditions would continue.

PROPOSED ACTION

The proposed action would be constructed in accordance with BMP's described in the project description and the permits described above to protect water quality. These practices would prevent sediments, fuels, hydraulic fluids, hazardous material, and other pollutants from entering the river, and control turbidity within acceptable levels.

Gravel placed in the river would be previously washed to minimize turbidity plumes. Some turbidity is expected and will be monitored in accordance with the relevant permits. If turbidity levels exceed permit standards, work will be suspended until the standards are being met. Consequently, instream work associated with placing the gravel in the river probably would result in relatively small, short-term, turbidity plumes immediately downstream of the construction area.

The gravel at Mississippi Bar was analyzed in 1986 and the results of that analysis are assumed to be similar for Sailor Bar. Following are excerpts from an Environmental Assessment prepared by Reclamation in 1987, related to the 1986 analysis (Reclamation 1987).

“Mercury was used during the gold recovery process, and some mercury exists on site, particularly in old slickens. Residual mercury has washed through the tailing piles and concentrated in the clay slickens and dredge pond sediments underlying the dredge tailings proposed to be mined. In 1986, soil samples were collected from slickens areas and analyzed for mercury using two different methods. However, no soil material exists with the tailing piles for testing. For sample with the highest total mercury, a sodium citrate leaching test resulted in 10 parts per billion (p/b). A deionized extraction test yielded 3 p/b.

“Mining and reshaping would not cause the release of hazardous or toxic wastes. Because the slickens support mature vegetation which would be preserved, the proposed mining operations would not disturb the slickens (clay materials). Therefore, there should be no discernible release of mercury and no increased mercury concentrations in the American River due to the project. Representatives of the Central Valley Regional Water Quality Control Board did not perceive the results of the lab tests of the mining as a potential threat to the beneficial uses of the State's waters.”

Since the gravel will be washed, and the waste water placed in settling basins, there is even less chance that mercury would be introduced into the river with the gravel. The settling basins will be sampled and tested for mercury prior to wash water being placed in them, and wash water and sediment in the basins will be periodically sampled and tested. If testing shows significantly elevated mercury levels compared to pre-project measurements then we will assess the need to take remedial actions and determine what, if any, additional measures should be taken to avoid adverse effects from the concentration of mercury.

ALTERNATIVE ACTION

The environmental consequences are the same as the proposed action.

CUMULATIVE EFFECTS

Turbidity is an issue with this project, and there are BMP's and permit conditions that ensure that turbidity standards will be met. Considering the relatively short time that in stream work will be underway, and meeting the standards, there would not be any significant cumulative water quality effects.

Mercury entering the LAR is another issue, and there are BMP's to prevent this from occurring.

The Lower Sunrise Side Channel Project may be under construction in the late summer, 2008, which is the same time as the Upper Sailor Bar Augmentation is planned. The Lower Sunrise Side Channel Project will use bladders to allow construction to take place isolated from the river, and then to do the final construction in the river during a day or so. The Lower Sunrise Side Channel Project is about four miles downstream of Upper Sailor Bar. For these reasons, little, if any cumulative effects between these two projects is anticipated.

GEOLOGY AND SOILS

Affected Environment

For both Mississippi Bar and Sailor Bar, the area has been highly disturbed as a consequence of historic gold mining operations. Dredger tailings are prevalent, and in some areas they have been partially, or largely, removed for construction gravel. Where gravel remains, it is poorly graded with sand, cobble, and boulders in upper portion of the dredge piles. Where gravel has been mined, silty sand or silty sand with gravel is present at the surface, which in turn overlies sandy materials and a basal layer of fines deposited over bedrock or undredged deposits. In between windrows of dredge materials occasionally are parallel rows of slickens deposits, which are fine grained materials (silts or clays) that settled out of standing water during the dredging process. The local bedrock is the Merhten Formation which is usually well indurated and slightly to well cemented silty sands or mud-stones. In some locations in the project area, the Merhten Formation is exposed along the river bank. (Sherer, 2008)

The side channel sites are primarily gravel bars with some outcropping of the Merhten Formation.

Environmental Consequences

NO ACTION ALTERNATIVE

Under the No Action Alternative, the existing conditions would continue.

PROPOSED ACTION

The proposed action is to acquire gravel from dredger tailings at Mississippi Bar, to sort it by size, wash it, and place the suitable sized gravel in the river for salmonid spawning and rearing habitat. Up to 70,000 cubic yards are proposed to be removed from Mississippi Bar.

Alternatively, about one half of the 70,000 cubic yards would be removed from Sailor Bar.

Roughly 50% of the gravel processed is expected to be unsuitable for placing in the river and it would be left on site. Gravel acquisition areas would be restored in accordance with a restoration plan.

When removing the gravel from the dredger tailings, care would be taken to remove the upper layers of gravel and avoid the underlying silty sands and slickens that would be unsuitable for placing in the river and could contain low levels of mercury (see section on Water Quality).

When excavating the side channels, if needed, the material would be sorted by size, and the suitable sized gravel placed in the excavated side channel. The unsuitable, or not needed, gravel would be spread on the bar. It is likely that the Merhten Formation would be encountered at side channel sites 1 and 2.

ALTERNATIVE ACTION

The environmental consequences are the same as the proposed action.

CUMULATIVE EFFECTS

The only cumulative effect on geology and soils is that the extraction of gravel may be considered a continuation of previous gravel mining in the area.

FISHERIES

Affected Environment

Fishery effects of the proposed action and alternatives would be limited to the fish in the American River from Nimbus Dam to Upper Sunrise and from Jed Smith Bridge to Arden Rapids.

The LAR is habitat for seven fish species of management concern. Winter-run Chinook salmon is federally listed as endangered; spring-run Chinook salmon and Central Valley steelhead are federally listed as threatened. Steelhead are included in the Central Valley ecological unit. Striped bass and American shad are important sport-fishing species, fall-run Chinook salmon is an important commercial and sport-fishing species, and Sacramento splittail recently has been de-listed as threatened.

In years of high flow, during early winter, Sacramento splittail enter the American River and spawn in the lower reaches in areas of over-bank flooding. Various life stages of Sacramento

splittail may inhabit the lower reaches of the river from December through May. These spawning and rearing areas are outside the area potentially impacted by the proposed action and alternatives.

American shad enter and spawn in the LAR during the late spring; there is evidence that rearing occurs in the river as well. Adult striped bass inhabit the LAR throughout the year; the population peaks in summer. There is little evidence that striped bass spawn in the river; however, the LAR is a rearing area.

Fall-run Chinook salmon spawn in the fall, and fry or smolts emigrate by the following spring. Salmon start spawning when water temperatures drop below 60°F. Initiation of spawning in the LAR is induced by the release of cold water from Folsom Reservoir. Although winter-run and spring-run Chinook salmon do not spawn in the LAR, juveniles do rear in the lower portion of the river, outside the area effected by the proposed action.

Since 2000, between 13,500 (2007) and 178,000 (2003) fall-run Chinook salmon have returned to the LAR annually (Titus 2007 and Healey 2008). During this period, the hatchery took between 4,500 (2007) and 26,000 (2004) salmon, and the remainder of the fish spawned in the river or died before spawning (including being caught by fishermen). Those salmon that reach the hatchery diversion weir and do not enter the hatchery are thought to ultimately drop back downstream and spawn. When relatively large numbers of salmon return to spawn, there is insufficient spawning habitat available in the upper portions of the river, and the redds of earlier spawning salmon are destroyed by later spawning fish as they superimpose their redds on the earlier redds.

Central Valley steelhead spawn in the river during winter and early spring, then rear in the river for a year or more. The smolts typically migrate to sea in the spring. Temperature is considered a limiting factor in production, especially during summer and early fall. The temperature goal for the protection of steelhead is not to exceed a daily average temperature of 65°F during summer and early fall; however, this cannot be achieved in all years.

Steelhead returns to the river are variable from year to year. Since 2002 they have varied from about 1,200 fish (2003) to 3,150 fish (2007) (Hannon 2007). Steelhead spawning in the river ranged from about 270 fish (2005) to 485 fish (2007), with the remainder going into the hatchery. The relatively few wild steelhead that enter the hatchery are returned to the river unharmed. Steelhead seek smaller stream habitats, such as side channels, for spawning, which are limited on the LAR.

Environmental Consequences

NO ACTION ALTERNATIVE

No new impacts on fisheries would result from implementation of the No Action Alternative.

PROPOSED ACTION

The proposed action includes several BMP's that are intended to minimize adverse effects on fish: The added gravel would be uncrushed, rounded "natural river rock" with no sharp edges, and the distribution of particle size would be in accordance with recommendations of the Anadromous Fish Restoration Program; front loaders placing the gravel would have rubber wheels and would be moving slow enough for fish to avoid disturbed areas; the period of in river work would be July through September, the period of lowest potential impact to salmonids; the gravel would be washed and have a cleanliness value of 85 or higher, based on CalTrans Test #227, and the gravel would be completely free of oils, clay, debris, and organic material.

The goal of the project is to beneficially affect salmon and steelhead spawning and rearing habitat with the result of increasing the production of these species in the LAR. Work in the river would be limited to times of the year when effects on salmon and steelhead life stages in the river can be minimized. The egg incubation period is the most sensitive life stage so would be avoided by conducting instream activities from July through September, or as recommended through consultation with the National Marine Fisheries Service. Although juvenile steelhead and a few early returning adult Chinook salmon would be present in the river, they would be sufficiently mobile to avoid construction activity and areas of temporary turbidity.

There would be no effect on spring-run or winter-run Chinook salmon. They do not spawn in the river, and their rearing habitat is in the lower most portions of the river, far removed from the project.

The number of salmon entering the hatchery is expected to remain the same. The percentage of salmon entering the hatchery is small compared to the number of fish that remain in the river, and hatchery personnel regulate the number of fish entering the hatchery at all times. Because of their propensity to seek out small streams, steelhead are attracted to the fish ladder and most of them enter the hatchery. By improving spawning habitat in the river, it is hoped, and expected that a larger percentage of the steelhead would spawn in the river than do now.

The essential fish habitat (EFH) provisions of the Magnuson-Stevens Act provide guidelines for fishery management councils to identify and conserve necessary habitats for fish covered under federal fishery management plans. The LAR is designated as EFH for Chinook salmon. The proposed action would not have any adverse effect on EFH. Spawning habitat is a key limiting factor to Chinook salmon production in the LAR. The proposed action is expected to provide significant benefits to Chinook salmon EFH by substantially increasing the spawning and rearing habitat for Chinook salmon.

Construction would dislodge aquatic benthic organisms and the gravel being placed in the river would take a few months to recolonize. During construction this would provide a feeding opportunity for fish downstream (Merz 2008). Recolonization would begin immediately following the gravel addition.

The project would have no effect on splittail. There is no documentation that splittail inhabit the project area, and if they were present, in-river construction activities would not be underway during the time when they might be present (December through May).

There would be no effect on striped bass. Juvenile and adult striped bass are found in the project area; however they are sufficiently mobile to avoid the areas of construction and temporary turbidity.

ALTERNATIVE ACTION

The environmental consequences to fisheries would be the same as for the proposed action.

CUMULATIVE EFFECTS

There would be positive cumulative effects on salmon and steelhead from the proposed action and other projects intended to improve conditions for salmonids in the LAR, including: The Lower Sunrise Side Channel Project, the Nimbus Hatchery Fish Ladder Project, Isolation Pool Projects, and operational considerations associated with the operation of Folsom Dam and Reservoir.

VEGETATION AND WILDLIFE

Affected Environment

Vegetation in the project area consists primarily of riparian vegetation, annual grassland, and disturbed areas. Dominant species observed in the proposed construction areas are willows and blackberries along with scattered Fremont cottonwoods, blue oaks, interior live oaks, and alders.

Typical wildlife species in riparian habitat includes red-tailed hawk, Swainson's hawk, red-shouldered hawk, great horned owl, American kestrel, numerous species of songbirds such as black phoebe, Anna's hummingbird, American robin, and western scrub-jay; and black-tailed deer, striped skunk, rodents, reptiles, and amphibians.

Typical wildlife in and on the shores of the American River include gulls, egrets, herons, cormorants, mergansers, mallards, goldeneyes, wading birds, herons, beavers, and muskrats.

Typical wildlife in grassland areas include the gopher snake, common garter snake, American crow, western meadowlark, European starling, Brewer's blackbird, western scrub-jay, killdeer, California vole, black-tailed jackrabbit, and California ground squirrel.

Following is a description of the access roads and staging areas:

Nimbus Shoals: The access route to Site 1 follows an existing road. The stockpile area is mostly barren cobble with scattered annual vegetation.

Upper Sailor Bar: The access route to sites 2 and 3 would be from the processing facility at Mississippi Bar over existing paved roads to the dirt parking area. From there a road would have to be constructed through about 130 yards of vegetation consisting primarily of blackberry,

willow, alder, tree of heaven, and sycamores. Several small oak trees and tree of heaven, and a fig tree would likely be removed. The stockpile area near the river is mostly open with a few willows, alders, and rushes. Alternatively the access route would be from the processing facility at Sailor Bar over exist dirt roads, a section of paved road, to the dirt parking area.

The Sailor Bar proposed side channel area is dominated by several species of willows, scattered cottonwoods and alders , a few sycamores, a few blue oaks and interior live oaks , one gray pine, blackberry shrubs, and fennel. Vegetation cover is about 75 percent along with disturbed areas and rocks.

A temporary stockpile area for the project is located about one-third mile from the river and is completely barren from previous stockpiling. There is an intermittent wetland bordering the south of the area.

Lower Sailor Bar: Once the gravel reaches Sailor Bar from Mississippi Bar, the access route to Site 4 follows existing dirt roads.

The alternative main gravel access and processing site at Sailor Bar is located near the Olive Avenue entrance to the park. (Figure 3-3). This area also would be used for stockpiling gravel before hauling it to the augmentation sites. This site consists almost entirely of barren mine tailings with a few scattered shrubs (no elderberries).

Upper Sunrise Area: Once the gravel reaches Sailor Bar from Mississippi Bar, the access road to Site 5 is an existing dirt road. Temporary access would be bladed for the last approximately 50 yards. The latter consists of willows with a few alders and sycamores. The access road from the alternative Sailor Bar processing site is an existing dirt road.

Upper Sunrise Side Channel: The access road to the side channel and Site 6 is mostly an existing park road until the island. The latter has sparse vegetation except for annual vegetation and scattered shrubs. The Upper Sunrise Side Channel area has little perennial vegetation as it historically had water in it.

American River South: The access road mostly follows an existing park road heading north. Temporary access would be bladed for about 75 yards through annual vegetation and small shrubs. The rest of the access would be on an existing road except for about 15 yards through willows.

The Mississippi Bar gravel site is shown in Figure 3-7. This site consists entirely of barren mining tailings with no vegetation except for some annual grass. There is a heron/egret rookery/roosting area at the east end of Mississippi Bar, about 2300 feet from the Mississippi Bar gravel site.

Existing trees would be flagged along proposed gravel and staging routes to avoid being cut down.

A wetlands delineation of the proposed roads and gravel storage areas was conducted on March 20 and 21 and May 5, 2008. (Sacramento Region Water Forum 2008c). The delineation found 0.79 of seasonal wetlands near the project sites. None of the seasonal wetlands were in the routes of the access roads, at the channel sites, at the gravel sites. Several wetlands are adjacent to the existing gravel stockpile area near lower Sailor Bar and adjacent to the Mississippi Bar gravel site. (Figures 4-1 and 4-2).

Figure 4-1. Sailor Bar Wetlands



Figure 4-2. Mississippi Bar Wetlands



Environmental Consequences

NO ACTION

Under the No Action Alternative, the existing conditions would continue.

PROPOSED ACTION

Construction of new side channels would remove about 1.2 acres of existing habitat. Blading of temporary access roads would remove about 0.4 acres of existing habitat. About 0.2 acres of this is riparian vegetation and the rest is grassland or barren.. The project would not affect any wetlands.

There would be almost no impacts to vegetation and wildlife at the Upper Sailor Bar or Mississippi Bar, and alternative Sailor Bar, gravel acquisition areas as these areas are almost completely barren.

Gravel processing operations would not affect the heron/egret rookery at Mississippi Bar. Noise levels greater than 85 dB can cause distress to birds. However, Table 4-9 shows that noise from gravel processing would decrease to 70 dB at 50 feet and 50 dB at 1,461 feet away from the

processing facility.

Existing trees would be flagged along proposed gravel haul and staging routes to avoid being cut down, or otherwise damaged. Some trees overhanging the haul roads at Sailor Bar would have to be trimmed.

The seasonal wetland immediately south of the temporary stockpile area at Sailor Bar would be flagged or fenced and avoided during construction.

Reclamation and Sacramento County Department of Regional Parks would develop a restoration plan for areas within the American River Parkway that would be affected by the project; and Reclamation would develop one for Mississippi Bar. In developing the plans, the following mitigation measures would be implemented:

To compensate for removed riparian shrubs and trees, the plans would identify tree and shrub species that would be planted, how, where, and when they would be planted, and measures to be taken to ensure a performance criteria of 70 percent survival of planted trees for a period of three consecutive years. The tree plantings would be based on native tree species compensated for in the following manner:

Oaks having a DBH of three to five inches would be replaced in-kind, at a ratio of 3:1, and planted during the winter dormancy period in the nearest suitable location to the area where they were removed. Oaks with a DBH of greater than five inches would be replaced in-kind at a ratio of 5:1.

Riparian trees (i.e., willow, cottonwood, poplar, alder, ash, etc.) and shrubs would be replaced in-kind and on site, at a ratio of 3:1, and planted in the nearest suitable location to the area where they were removed. Wetland vegetation damaged or removed by project activities would be replaced by securing the wetland soils and seed bank prior to excavating. Then, following construction, the soil would be replaced in the same location from where it was removed. If the proposed action causes any exposed slopes or exposed areas on the stream banks, these areas would be seeded (with weed-free straw or mulch) with a blend of a minimum of three locally native grass species. One or two sterile normative perennial grass species may be added to the seed mix provided that amount does not exceed 25 percent of the total seed mix by count. Locally native wildflower and/or shrub seeds may also be included in the seed mix. The seeding would be completed as soon as possible, but no later than November 15 of the year construction ends.

All disturbed soils within the project site would be stabilized to reduce erosion potential, both during and following construction. Planting, seeding with native species, and mulching would be used. Where suitable vegetation cannot reasonably be expected to become established, non-erodible material would be used for such stabilization.

To protect nesting birds, no construction would be completed from March 1 through July 1 unless the following preconstruction surveys are completed by a qualified biologist:

Raptors: Survey for nesting activity of raptors within a 500-foot radius of the construction site. Surveys would be conducted at appropriate nesting times and concentrate on mature trees. If any active nests are observed, these nests and nest trees would be protected (while occupied) during project activities.

Other Avian Species: Survey riparian areas for nesting activity within a 500-foot radius of the defined work area 2 to 3 weeks before construction begins. If any nesting activity is found, Reclamation would contact the Department Fish and Game and mitigation, to develop mitigation specific to each occurrence.

All pipes or similar structures that cannot be inspected (due to bends, etc.) would be capped or otherwise covered prior to being left overnight. If an animal is found in a pipe, the pipe would be avoided and the animal(s) left to leave of their own accord.

See Threatened and Endangered Species section for evaluation for sensitive species.

ALTERNATIVE ACTION

The environmental consequences to vegetation and wildlife would be the same as for the proposed action.

CUMULATIVE IMPACTS

The Lower Sunrise Side Channel Project, the Nimbus Hatchery Fish Ladder Project, and the Isolation Pool Projects, and would result in temporary or permanent loss of similar habitat types. The much larger Folsom Dam Safety and Flood Damage Reduction Project would also cause the loss of similar habitat types as well as other types which the proposed action would not affect.

THREATENED AND ENDANGERED SPECIES

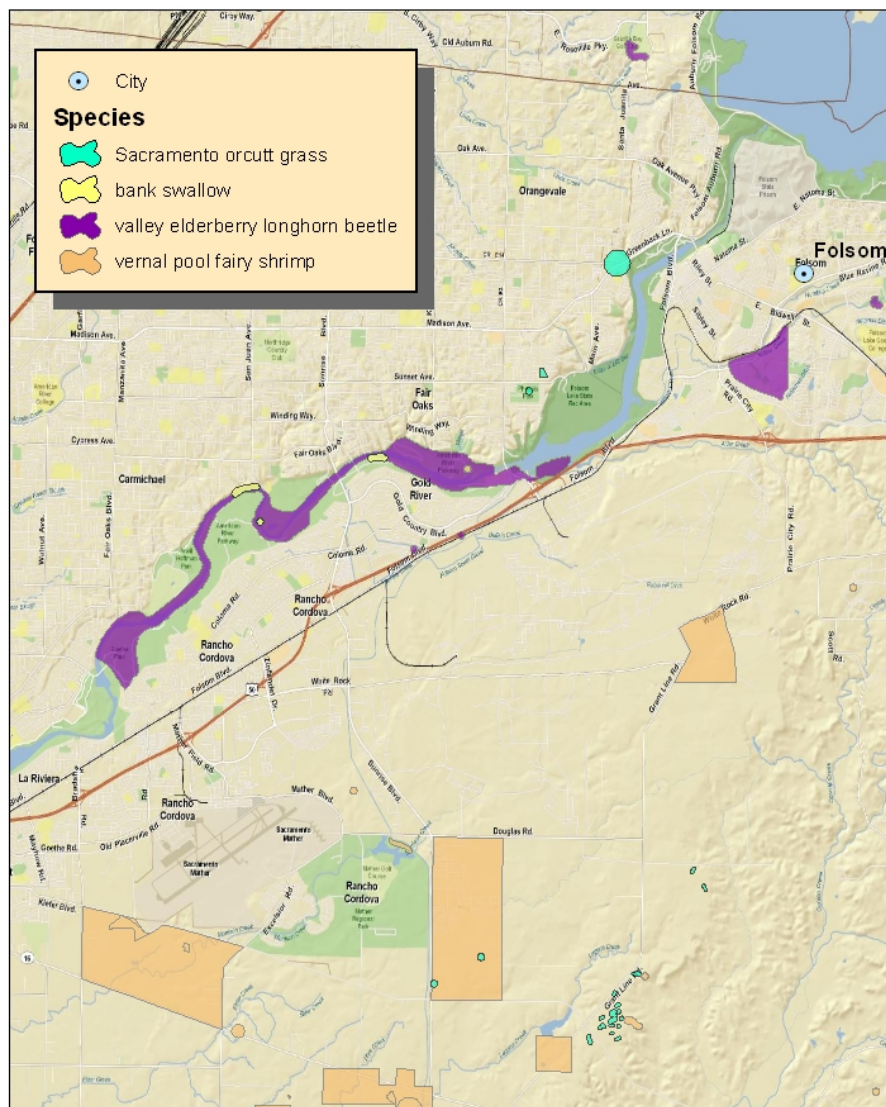
Affected Environment

FWS sent Reclamation a list of threatened and endangered species which may occur in the vicinity of the proposed action. (Appendix 1). The California Natural Diversity Data Base (CNDDDB) was searched for occurrences of Federal and State-listed, candidate, and sensitive species. Figure 4-3 shows locations of listed species according to the CNDDDB.

Table 4-1 shows the Federal and State-listed threatened and endangered species, effects determination, and impact discussions. The only terrestrial species which the proposed action may affect is the valley elderberry longhorn beetle (VELB). Elderberry shrubs are the host plant for the VELB and are found throughout the American River Parkway. The VELB is associated exclusively with elderberry plants in California's Central Valley and foothills during its entire life cycle.

The Sacramento County Department of Regional Parks had a survey done of all elderberry shrubs in the parkway in 2002-2004. A different study surveyed the Nimbus Shoals area. Figures 4-4 through 4-8) shows the results of these surveys near the sites for the proposed action and alternative. In March 2008, Reclamation staff searched for elderberry plants along all proposed haul roads, gravel storage sites and side channels to confirm the previous surveys.

Figure 4-3. California Natural Diversity Data Base Species Occurrences



Agency: Reclamation - MP-150
Date: 04/17/2008

CNDB Listed Species within the vicinity of the American River.

Table 4-1. Federal and State Listed and Federal Candidate Species for the Lower American River Salmonid Spawning Gravel Augmentation And Side-Channel Habitat Establishment Program

Common and Scientific Names	Legal Status ¹		Determination and Summary of Analysis		
	Federal	State	Species Effects Determination	Critical Habitat Effects Determination	Summary of Reasons for Effects Determination
Listed Species					
<i>Branchinecta conservatio</i> Conservancy fairy shrimp	E		No effect	No critical habitat	Occurs only in vernal pools and swales. There are no vernal pools near the project site.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	T		No effect	No critical habitat	Occurs only in vernal pools and swales. There are no vernal pools near the project site.
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	E		No effect	No critical habitat	Occurs only in vernal pools and swales. One occurrence is near Sailor Bar but away from roads.
<i>Desmocerus californicus</i> <i>Dimorphus</i> Valley elderberry longhorn beetle	T		Not likely to affect	No critical habitat	Elderberry shrubs, the host plant for the valley elderberry longhorn beetle (VELB), were found within 100 feet of many access roads or staging areas. None would be removed or trimmed. Roads would be watered when gravel trucks are traveling on them to avoid dust impacts to the shrubs and the VELB.
<i>Hypomesus transpacificus</i> delta smelt	T		No effect	No critical habitat	Occurs in Sacramento/San Joaquin Delta, more than 40 miles downstream from the project site. No water quality impacts to the Delta.
<i>Oncorhynchus mykiss</i> Central Valley steelhead Critical habitat, Central Valley steelhead	T X		Not likely to affect	No destruction or adverse modification	Timing window for instream work would be before the spawning season and after egg incubation. Gravel placement would increase the amount of and improve existing steelhead habitat. Temporary increased turbidity would not affect steelhead.
<i>Oncorhynchus tshawytscha</i> Central Valley spring-run Chinook salmon	T		No effect	No critical habitat	They do not spawn in the river, and their rearing habitat is in the lower most portions of the river, far removed from the project.
<i>Oncorhynchus tshawytscha</i> Winter-run Chinook salmon, Sacramento River	T		No effect	No critical habitat	They do not spawn in the river, and their rearing habitat is in the lower most portions of the river, far removed from the project.

Table 4-1. Federal and State Listed and Federal Candidate Species for the Lower American River Salmonid Spawning Gravel Augmentation And Side-Channel Habitat Establishment Program

Common and Scientific Names	Legal Status ¹		Determination and Summary of Analysis		
	Federal	State	Species Effects Determination	Critical Habitat Effects Determination	Summary of Reasons for Effects Determination
<i>Ambystoma californiense</i> California tiger salamander, central population Critical habitat	T X		No effect	No destruction or adverse modification	Found in annual grasslands, grass understory of valley foothill woodland, and uncommonly along streams. Breed and lay eggs in vernal pools and other temporary ponds. There are no vernal pools at the project site. The project river area is unsuitable habitat due to the fast running water and abundant predators being present.
<i>Rana aurora draytonii</i> California red-legged frog	T		No effect	No critical habitat	Red-legged frogs require aquatic habitat for breeding but also use a variety of other habitat types including riparian and upland areas. Adults often utilize dense, shrubby or emergent vegetation closely associated with deep-water pools with fringes of cattails and dense stands of overhanging vegetation such as willows. No habitat exists at the project site.
<i>Thamnophis gigas</i> Giant garter snake	T		No effect	No critical habitat	The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low-gradient streams, and other waterways and agricultural wetlands, such as irrigation and drainage canals and rice fields. There is no appropriate habitat at the project site.
<i>Riparia riparia</i> Bank swallow		T	No effect	No critical habitat	Riparian habitats. Requires vertical banks/cliffs with fine-textured sandy soils near streams, rivers, lakes and ocean to dig nesting holes. Bank swallows occur in several locations along the lower American River, but gravel would not be placed or stored near cliff areas.

Table 4-1. Federal and State Listed and Federal Candidate Species for the Lower American River Salmonid Spawning Gravel Augmentation And Side-Channel Habitat Establishment Program

Common and Scientific Names	Legal Status ¹		Determination and Summary of Analysis		
	Federal	State	Species Effects Determination	Critical Habitat Effects Determination	Summary of Reasons for Effects Determination
<i>Orcuttia viscida</i> Sacramento orcutt grass	E	E	No effect	No destruction or adverse modification	Occurs only in vernal pools. There are no vernal pools near the project site.
<p>Legal Status:</p> <p>E Endangered (listed as being in danger of extinction)</p> <p>T Threatened (Listed as likely to become endangered within the foreseeable future)</p> <p>C Candidate for listing</p> <p>X Critical habitat designated for this species.</p>					

Figure 4-4. Overview of Elderberry Occurrences

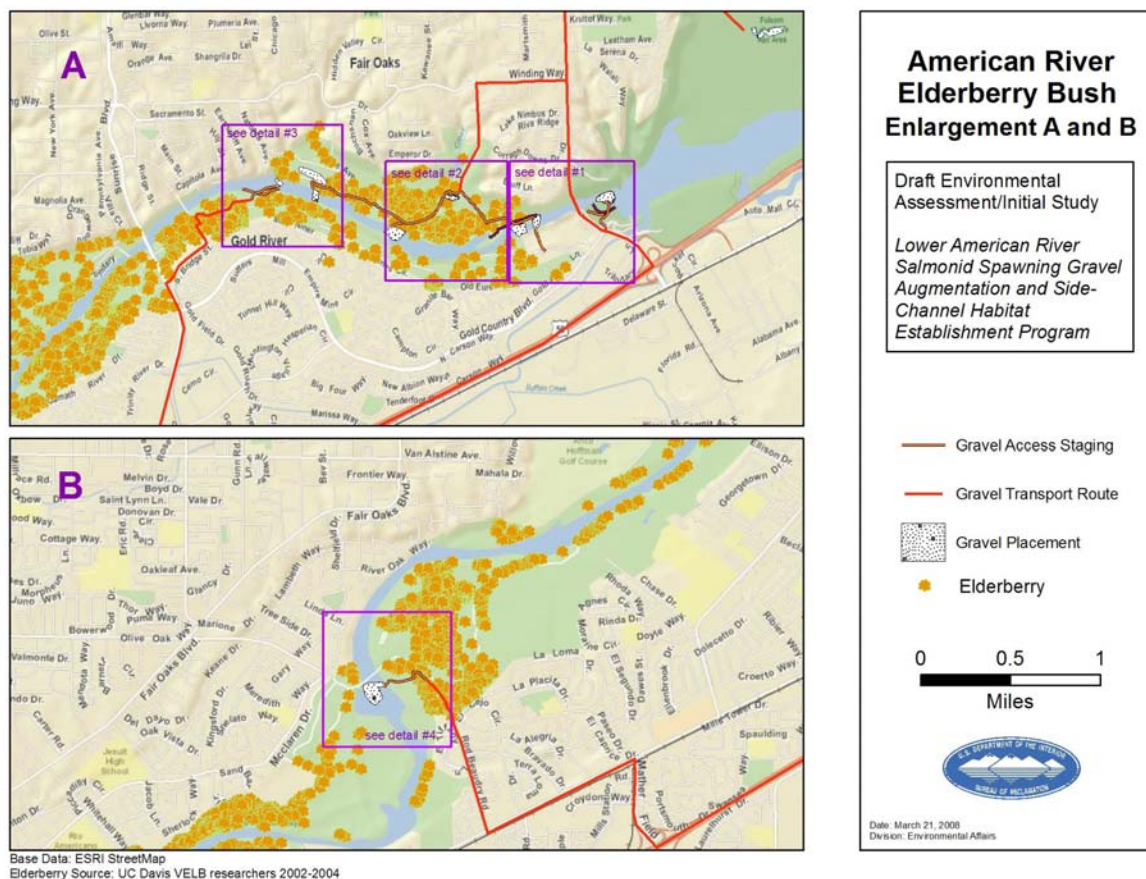


Figure 4-5.

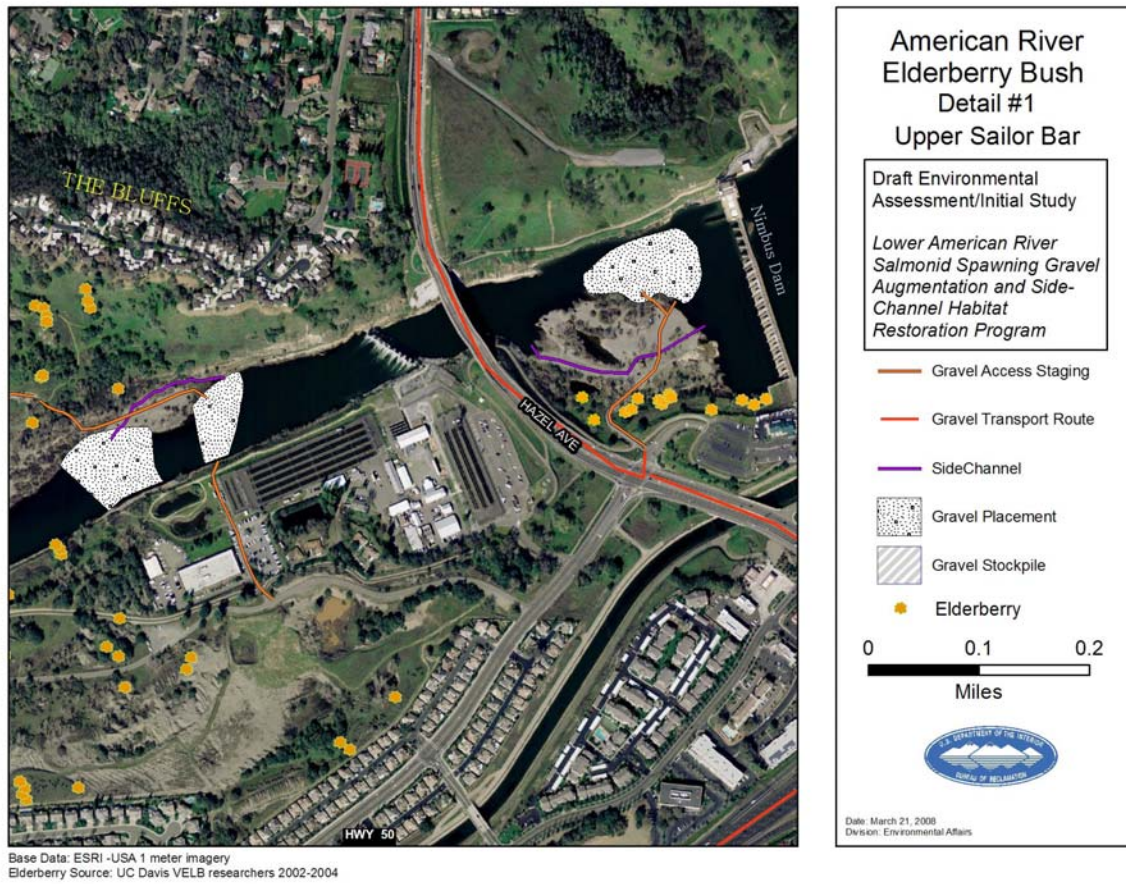


Figure 4-6.

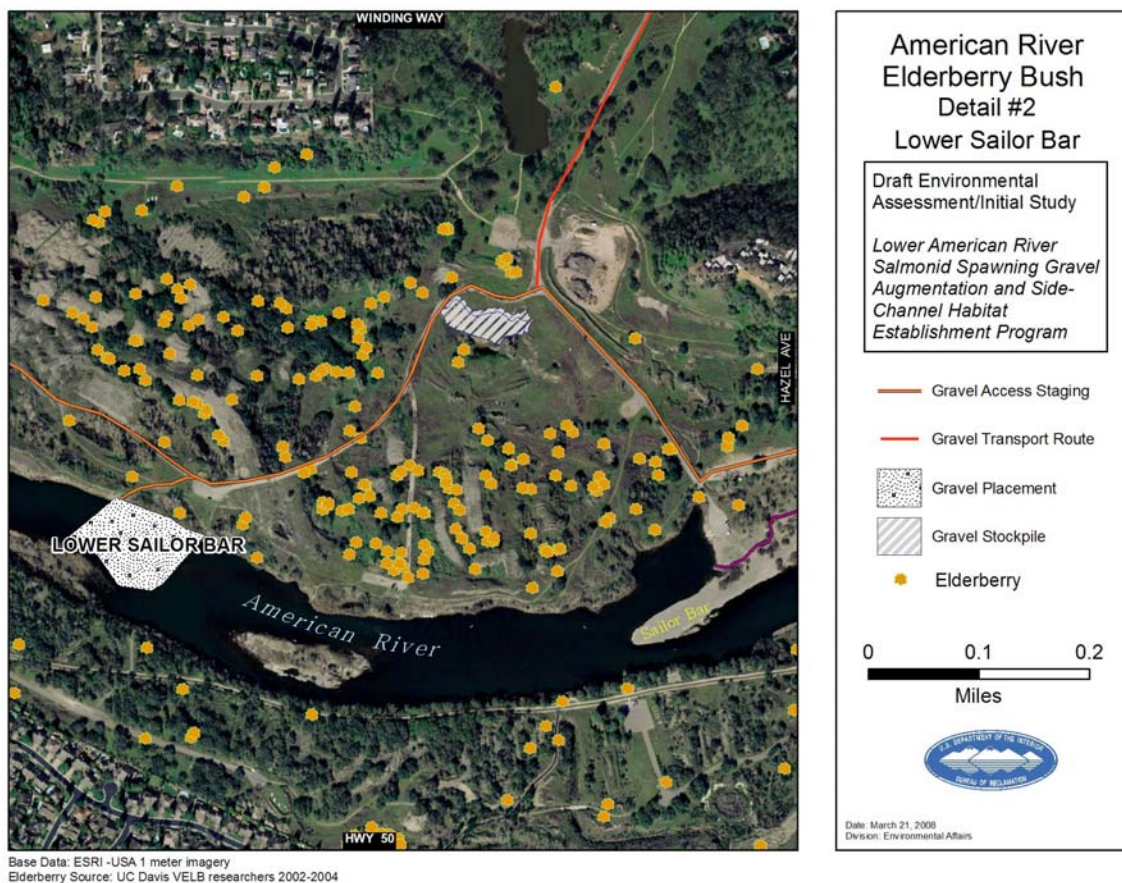


Figure 4-7.

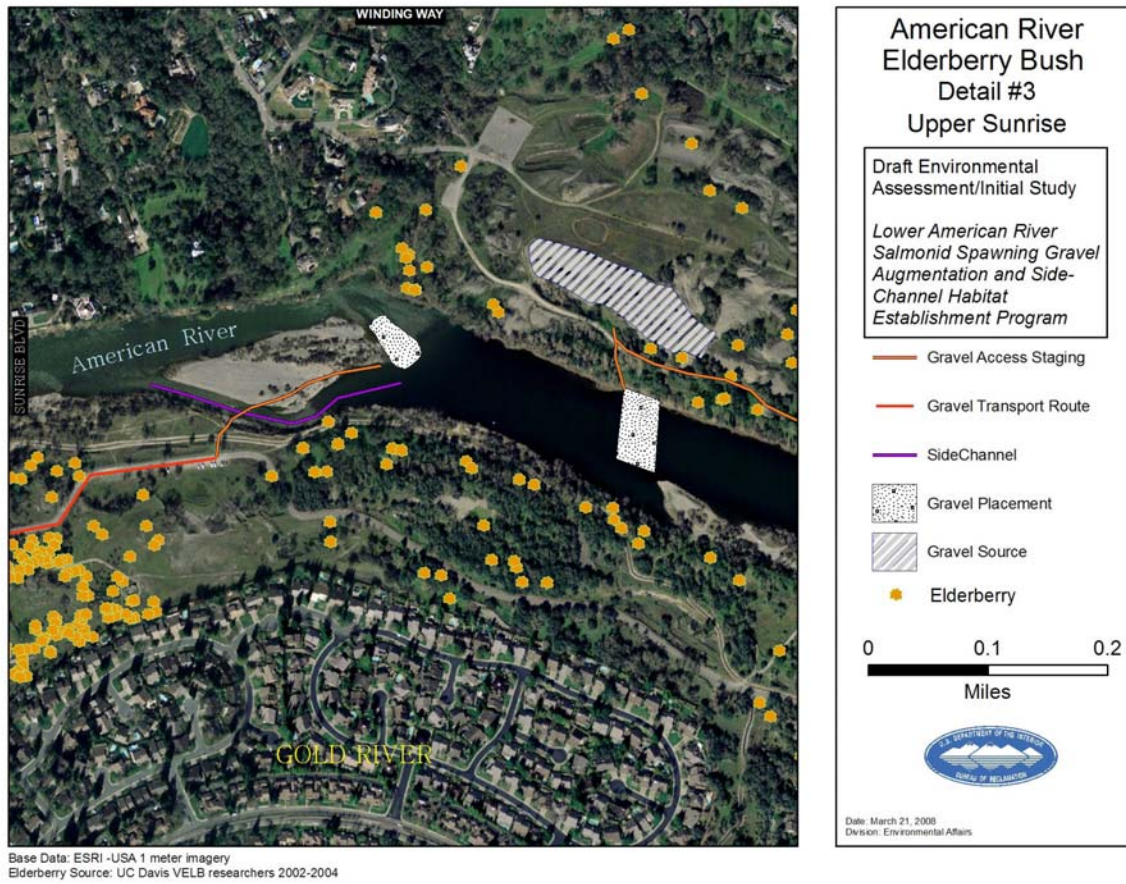
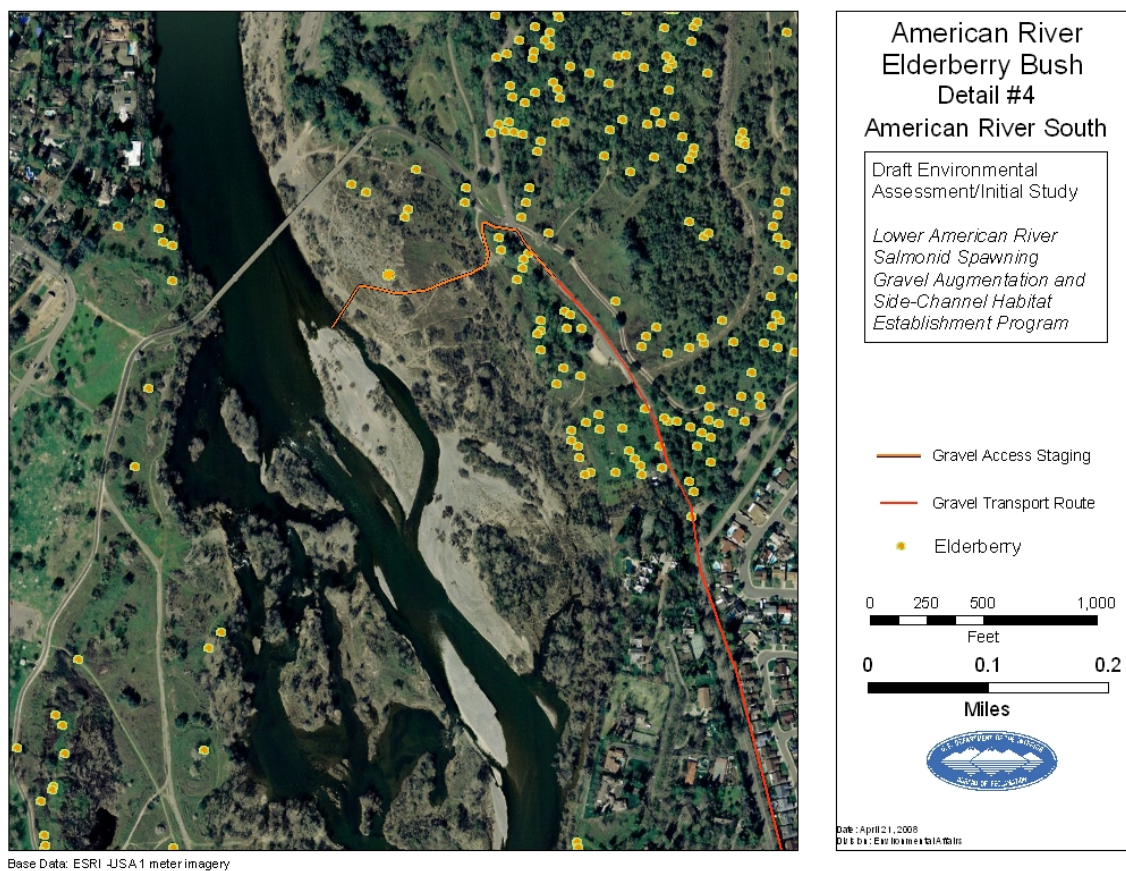


Figure 4-8.



Environmental Consequences

NO ACTION

Under the No Action Alternative, the existing conditions would continue.

PROPOSED ACTION

The proposed action would not likely adversely affect the VELB and would not adversely affect any of the other terrestrial threatened or endangered species shown in Table 1. Threatened and endangered fish are discussed in the Fisheries section.

FWS guidelines for VELB require complete avoidance within 100 feet around elderberry plants containing stems measuring 1.0 inch or greater in diameter at ground level.(FWS 1998). The locations of haul roads, gravel storage sites, and side channels have been designed to avoid either removing or trimming any elderberry plants. Nearly all access roads for gravel delivery are existing park roads. However, gravel trucks using the roads during the 5 years of the project would generate dust which may harm elderberry plants. Dust is listed in the species recovery plan as a threat to the VELB. To avoid affecting the VELB, roads/gravel sites within 100 feet of any elderberry plants would be watered each day when they are being used by gravel trucks and other project-related vehicles. Vehicles would not come in contact with any elderberry shrubs.

There is one elderberry shrub which would be within 100 feet of one the sections of roads which would have to be constructed at Lower Sailor Bar. This is the elderberry shrub closest to the river and near the gravel access staging road shown in Figure 4-6. This shrub is about 50 feet away from the road. This shrub would be fenced and flagged prior to construction.

In addition, the proposed action would have the following additional protective measures:

1. Brief contractors on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements.
2. Erect signs every 50 feet along the edge of the avoidance area with the following information: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained for the duration of construction.
3. Instruct work crews about the status of the beetle and the need to protect its elderberry host plant.

ALTERNATIVE ACTION

The environmental consequences to threatened and endangered species would be the same as for

the proposed action.

CUMULATIVE IMPACTS

Since the proposed action would not affect any terrestrial threatened or endangered species, there would not be any cumulative impacts with other projects. (See Fisheries section for fishery cumulative impacts.)

TRAFFIC

Affected Environment

Determination of roadway operating conditions is based upon comparison of traffic volumes to roadway capacity. “Levels of service” (LOS) describe roadway operating conditions. Level of service is a qualitative measure of the effect of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs. Levels of service are designated "A" through "F" from best to worst, which cover the entire range of traffic operations that might occur. Levels of Service (LOS) "A" through "E" generally represent traffic volumes at less than roadway capacity, while LOS "F" represents over capacity and/or forced conditions. Table 4-2 presents the level of service definitions (the numbers in the table are the average daily traffic per lane). Sacramento County utilizes a LOS “E” standard (or capacity) for urban areas, and a LOS “D” standard for rural areas (Sacramento County, 2004). All of the roadways in the study area are located in an urban area. For the US 50 Freeway, CalTrans also utilizes a LOS “E” standard.

Table 4-2. Roadway Level of Service Definitions

Capacity Class	A	B	C	D	E
Freeway - Full Access Control	7,000	10,800	15,400	18,600	20,000
Expressway - High Access Control	6,000	7,000	8,000	9,000	10,000
Arterial - Moderate Access Control	5,400	6,300	7,200	8,100	9,000
Arterial - Low Access Control	4,500	5,250	6,000	6,750	7,500
Rural Highway	1,200	2,400	3,950	6,750	11,450

(Sacramento County, 2004).

The roads that would be used to transport gravel to the augmentation sites and their average daily volume and Level of Service (LOS) are shown below.

Road/Highway	Access Control	Average Daily Volume	Ave Daily Volume per Lane	LOS
Sunset Avenue (2 lanes)	Low	8,076 (1)	4,038	A
Hazel Avenue (4 lanes)	High	53,909 (1)	13,477	F
Route 50 (6-8 lanes)	Full	127,000 (2, 3)	21,167	F
Mather Field Road (4 lanes)	Moderate	24,984 (1)	6,246	B
Folsom Boulevard (4 lanes)	Moderate	20,358 (1)	5,090	A
Rod Beaudry Drive (2 lanes)	Low	(4)	(4)	(4)
Winding Way (2 lanes)	Low	4,150 (1)	2,075	A
Illinois Avenue (2 lanes)	Low	2,625 (1)	1,312	A
Sunrise Boulevard (6 lanes)	High	84,011 (1)	14,001	F

(1) Sacramento County, 2007

(2) CalTrans, 2007

(3) Average Annual Daily Traffic (AADT) varies along the haul route on Route 50. As a worst case analysis, the AADT for the section between Sunrise Boulevard and Hazel Avenue is used (this is where the volume per lane is the highest).

(4) Average Daily Volume is not available.

Environmental Consequences

NO ACTION

Under the No Action Alternative, the existing traffic conditions would continue.

PROPOSED ACTION

All the gravel addition sites would involve transport of gravel from Mississippi Bar over County Roads and three (Sites 1, 6 and 7) on Route 50. It is likely that gravel addition at these sites would be done in separate years, and gravel would be delivered over a period of about a month (22 working days), on week days between the hours of 9:00 am and 3:00 pm. Reclamation anticipates that delivery of gravel to any one site would not be done at the same time as delivery to another site.

For residential streets, Sacramento County considers a project to have a significant effect if it would (1) result in a roadway operating in an acceptable LOS to deteriorate to an unacceptable

LOS; or (2) increase the volume/capacity ratio ($\Delta V/C$) by more than 0.05 on a roadway that is operating at an unacceptable level without the project (Sacramento County 2004). Capacity is defined as the level of service criteria for a LOS of E.

The level of service on these roads for the proposed action is shown below. The number of one-way trips is twice the number of round trips.

	Existing Volume Per Lane	Existing LOS	Proposed Volume Per Lane	Proposed LOS	$\Delta V/C$
<u>Site 1 (68 one-way trips per day)</u>					
Sunset Boulevard	4,038	A	4,106	A	0.009
Hazel Avenue	13,477	F	13,545	F	0.007
<u>Sites 2 and 3 (86 one-way trips per day) (1)</u>					
Sunset Boulevard (2 lane)	4,038	A	4,081	A	0.006
Hazel Avenue (4 lane)	13,477	F	13,499	F	0.002
Winding Way (2 lane)	2,075	A	2,118	A	0.006
Illinois Avenue (2 lane)	1,312	A	1,356	A	0.006
<u>Site 4 (76 one-way trips per day)</u>					
Sunset Boulevard (2 lane)	4,038	A	4,076	A	0.005
Hazel Avenue (4 lane)	13,477	F	13,496	F	0.002
Winding Way (2 lane)	2,075	A	2,113	A	0.005
Illinois Avenue (2 lane)	1,312	A	1,351	A	0.005
<u>Site 5 (24 one-way trips per day)</u>					
Sunset Boulevard (2 lane)	4,038	A	4,050	A	0.002
Hazel Avenue (4 lane)	13,477	F	13,483	F	0.001
Winding Way (2 lane)	2,075	A	2,087	A	0.002
Illinois Avenue (2 lane)	1,312	A			
<u>Site 6 (14 one-way trips per day)</u>					
Sunset Boulevard	4,038	A	4,052	A	0.002
Hazel Avenue	13,477	F	13,491	F	0.001
Route 50	21,167	F	21,181	F	0.001
Sunrise Boulevard	14,001	F	14,015	F	0.001

Site 7 (104 one way trips per day)

Sunset Boulevard	4,038	A	4,142	A	0.014
Hazel Avenue	13,477	F	13,581	F	0.010
Route 50	21,167	F	21,181	F	0.005
Mather Field Road	6,246	C	6,350	C	0.012
Folsom Boulevard	5,090	B	5,094	B	0.012
Rod Beaudry Drive	(2)	A	(2)	(2)	0.014 (3)

(1) Sites 2 and 3 combined because most of the gravel for Site 2 is stockpiled at Sailor Bar and only a small amount may have to be added when Site 3 is augmented.

(2) Average Daily Volume not available.

(3) Based on LOS = A (worst case).

ALTERNATIVE ACTION

If Sailor Bar is the source of the gravel for the four augmentation sites at Sailor Bar, it would involve transport of gravel from Sailor Bar to other sites within Sailor Bar. This would not be on the public road system. The change in $\Delta V/C$ in the above table would then become 0.000 for Sites 2, 3, 4, and 5. The increase in truck traffic on existing roads within Sailor Bar for each gravel augmentation site would be about:

Sites 2 and 3 (1,950 round trips) – 86 one way trips per day

Site 4 (1,718 round trips) – 76 one way trips per day

Site 5 (557 round trips) – 24 one way trips per day

CUMMULATIVE EFFECT

Considering the relatively short duration of the project, there would not be any significant cumulative effects.

AIR QUALITY

Affected Environment

The proposed gravel augmentation sites, stockpiling areas, and truck routes are located within the Sacramento Valley Air Basin (SVAB), which is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD).

Concentrations of the following air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable and fine particulate matter (PM₁₀ and PM_{2.5}), and lead are

used as indicators of ambient air quality conditions. Because these are the most prevalent air pollutants known to be deleterious to human health, and because there is extensive documentation available on health-effects criteria for these pollutants, they are commonly referred to as “criteria air pollutants.”

Criteria air pollutant concentrations are measured at 37 monitoring stations in the SVAB. Both the California Air Resources Board (ARB) and U.S. Environmental Protection Agency (EPA) use the monitoring data to designate areas according to attainment status for criteria air pollutants established by the agencies. The purpose of these designations is to identify those areas with air quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. Sacramento County is currently designated as a serious nonattainment area for both the national (8-hour) and state (1-hour) ozone standards (ARB 2008). In addition, Sacramento County is designated as a nonattainment area for both national and state particulate matter (PM)₁₀ standards, and the state PM_{2.5} standard.

Construction-related emissions are described as “short-term” or temporary in duration and have the potential to represent a significant impact with respect to air quality, especially fugitive PM₁₀ dust emissions. Fugitive PM₁₀ dust emissions are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and vehicle miles traveled (VMT) by construction vehicles on- and off-site. Ozone precursor emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x) are primarily associated with gas and diesel equipment exhaust and the application of architectural coatings.

Environmental Consequences

NO ACTION ALTERNATIVE

The No Action Alternative would not involve any changes to the existing air quality.

PROPOSED ACTION

The proposed project would require limited ground-disturbing activities at Mississippi Bar, and the augmentation and side channel sites. Ground-disturbing activities at the stockpiling sites adjacent to the river would be minimized by working on existing dredger tailings or similar type of material. In addition, the project would require the construction or widening of dirt roads and ramps, which would be a minor source of emissions. The project might require drilling of wells adjacent to processing facilities for obtaining wash water for the gravel. The transportation of gravel to the augmentation sites would be a source of on-road emissions. Thus, the proposed project would result in temporary generation of ROG, NO_x, and PM₁₀ emissions from gravel extraction and stockpiling activities (e.g., minor ground disturbance, construction equipment, worker commute, and material transport exhaust emissions).

For the purposes of this analysis, it was assumed that 75,000 cubic yards of gravel would be transported from the gravel sources to the augmentation sites over the next 5 years, with work starting in 2008. Gravel would be transported to one augmentation site at a time and there would be no overlap between the transportation phases. It was assumed that gravel extraction, transport,

and deposition activities could occur simultaneously. Stockpile areas adjacent to the river would be 0.5 acre in size. The side channel construction at sites 1, 2, and 3 are assumed to not overlap in time with the other construction activities.

Project-generated construction-related emissions were modeled using ARB's EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions, as contained in the URBEMIS2007, version 9.2.4 computer model (Rimpo, 2008).

The calculated NO_x emissions for each gravel augmentation and side-channel site are shown in Table 4-3 (Sacramento Region Water Forum, 2008c). SMAQMD's threshold for significance is 85 lb/day.

Table 4-3. Summary of Modeled Project-Generated Construction-Related Emissions of Criteria Air Pollutants and Precursors – Proposed Action	
Source	Emissions (lb/day)
	NO_x
<i>Site 1</i>	
On-road Emissions – Gravel from Sailor Bar	3.95
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	38.95
Worker Commute Exhaust	0.07
Total Daily Emissions	42.97
<i>Site 2</i>	
On-road Emissions – Gravel from existing stockpile at Sailor Bar	1.69
On-road Emissions – Gravel from Mississippi Bar	0.36
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation) ¹	48.60
Worker Commute Exhaust	0.12
Total Daily Emissions	50.76
<i>Site 3</i>	
On-road Emissions – Gravel from Mississippi Bar	4.51
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	45.89
Worker Commute Exhaust	0.10
Total Daily Emissions	50.51
<i>Site 4</i>	
On-road Emissions – Gravel from Mississippi Bar	5.61
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	43.28
Worker Commute Exhaust	0.09
Total Daily Emissions	48.99
<i>Site 5</i>	
On-road Emissions – Gravel from Mississippi Bar	2.14
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	45.89

Table 4-3. Summary of Modeled Project-Generated Construction-Related Emissions of Criteria Air Pollutants and Precursors – Proposed Action

Source	Emissions (lb/day)
	NO _x
Worker Commute Exhaust	0.10
Total Daily Emissions	48.14
<i>Site 6</i>	
On-road Emissions – Gravel from Mississippi Bar	3.12
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	40.56
Worker Commute Exhaust	0.09
Total Daily Emissions	43.77
<i>Site 7</i>	
On-road Emissions – Gravel from Mississippi Bar	25.07
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	37.94
Worker Commute Exhaust	0.08
Total Daily Emissions	63.08
<i>Side Channel at Site 1</i>	
Equipment Exhaust Emissions	15.73
Worker Commute Exhaust	0.02
Total Daily Emissions	15.75
<i>Side Channel Construction at Site 2</i>	
Equipment Exhaust Emissions ³	19.62
Worker Commute Exhaust	0.03
Total Daily Emissions	19.64
<i>Side Channel at Site 3</i>	
Equipment Exhaust Emissions	17.64
Worker Commute Exhaust	0.02
Total Daily Emissions	17.66
SMAQMD Thresholds (lb/day)	85
¹ Based on EMFAC2007 and OFFROAD2007 emission factors contained in URBEMIS Version 9.2.4, using general information provided in the project description (e.g., equipment list, stockpiling volumes and area, number of truck trips), and default model settings and parameters. Stockpiling is assumed to take place at one site at a time, i.e., trucks deliver the rock to only one site at a given time. Each construction activity would occur for 22 working days. ² Gravel extraction requires the use of 1 gravel-sorter and 1 front-end loader. Stockpiling requires the use of 1 front-end loader. Gravel augmentation requires the use of 3 front-end loaders, 1 bulldozer, and 1 excavator. ³ Side channel construction requires the use of 1 bulldozer and 1 front-end loader. Source: Data modeled by EDAW 2008	

In addition, according to SMAQMD, if a project's mass emissions (lb/day) of NO_x from mobile sources is determined to be less than the significance threshold using SMAQMD-recommended methodologies, then exhaust emissions of other pollutants (e.g., ROG, CO, NO₂, and SO₂) from operation of construction equipment and worker commute would also be less than significant (SMAQMD 2004). With respect to PM₁₀ emissions, SMAQMD has developed screening-level values related to the maximum actively disturbed area of the project site (SMAQMD 2004). According to those levels, PM₁₀ emissions from projects in which less than 5 acres would be actively disturbed on any given day during construction would be considered less than significant. Stockpiling activities and side channel construction at all sites would involve daily ground disturbance of less than 2 acres.

Implementation of the proposed project would not result in a net increase of long-term operation-related emissions (e.g., regional ROG, NO_x, or PM₁₀; or local CO) from mobile, stationary, or area sources. Specifically, the long-term operation of the proposed project would not require any additional employees, and, thus, would not result in any associated employee commute trip emissions of criteria air pollutant or ozone precursor emissions from VMT. Furthermore, project implementation would not result in the operation of any new major stationary emission sources, and area source emissions associated with landscaping and maintenance activities would take place at the same level as without the project. Thus, project-generated operation-related emissions would not conflict with or obstruct implementation of the applicable air quality plan.

Sensitive receptors in the vicinity of the project site include residences located about 2000 feet north of Mississippi Bar, and 700 feet east of Sailor Bar. Residential development is also located in the vicinity of all the augmentation sites, at distances ranging from 350 feet to 800 feet. As discussed above, project implementation would not result in emissions of criteria air pollutants and precursors that exceed SMAQMD's significance thresholds. Thus, project generated emissions of criteria air pollutants and precursors would not expose sensitive receptors to substantial pollutant concentrations.

Project construction would result in short-term generation of diesel exhaust emissions from the use of off-road diesel equipment required for gravel extraction, processing, stockpiling, and deposition, in addition to diesel-fueled on-road haul trucks used for hauling gravel from the extraction sites to the augmentation sites. Particulate exhaust emissions from diesel fueled engines (diesel PM) were identified as a toxic air contaminant (TAC) by the ARB in 1998. The dose to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (Salinas, 2004).

The duration of off-road equipment used near sensitive receptors located along the gravel source, stockpiling, and deposition sites would be short (a maximum of 1 month at each site). In addition, mobile equipment would progress along the roadways and would not operate near (within approximately 500 feet of) any one receptor for more than a few minutes per day at a

time. The proposed project would represent less than 0.2% of the 70-year exposure period for any nearby sensitive receptor in the area. SMAQMD does not have any current guidance on TAC emissions from mobile equipment, or a threshold of significance for exposure to emissions from this equipment. In addition, diesel PM is highly dispersive and studies have shown measured concentrations of vehicle-related pollutants, including ultra-fine particles, decrease dramatically within approximately 300 feet of the source (Zhu and Hinds 2002, ARB 2005). Thus, because the use of mobilized equipment would be temporary in combination with the dispersive properties of diesel PM and the distance to the closest sensitive receptor for each site, construction-related activities would not be anticipated to expose sensitive receptors to substantial pollutant concentrations.

With respect to mobile source TAC emissions, implementation of the proposed project would not result in a net increase of long-term operation-related emissions. Specifically, the long-term operation of the proposed project would not result in any commute trip TAC emissions from VMT. Furthermore, project implementation would not result in the operation of any new major stationary emission sources. Thus, project-generated operation-related TAC emissions would not expose sensitive receptors to substantial pollutant concentrations.

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptor. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

The proposed project would result in diesel exhaust emissions from on-site construction equipment at the gravel sources, stockpiling, and augmentation sites during the site preparation phases, as well as during gravel hauling from and Mississippi Bar. The diesel exhaust emissions would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance.

The project would not include the long-term operation of any new sources of odor. Thus, the proposed project would not create objectionable odors affecting a substantial number of people.

ALTERNATIVE ACTION

If gravel was acquired from Sailor Bar for the Sailor Bar augmentation sites the NO_x emissions for those sites are shown in Table 4-4.

Table 4-4
Summary of Modeled Project-Generated Construction-Related Emissions of Criteria Air Pollutants and Precursors – Alternative Action for Sailor Bar Sites

Source	Emissions (lb/day)
	NO _x
<i>Site 2</i>	
On-road Emissions – Gravel from existing stockpile at Sailor Bar	1.69
On-road Emissions – Gravel from Sailor Bar	0.34
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation) ²	48.60
Worker Commute Exhaust	0.12
Total Daily Emissions	50.74
<i>Site 3</i>	
On-road Emissions – Gravel from Sailor Bar	4.20
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	45.89
Worker Commute Exhaust	0.10
Total Daily Emissions	50.19
<i>Site 4</i>	
On-road Emissions – Gravel from Sailor Bar	2.52
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	43.28
Worker Commute Exhaust	0.09
Total Daily Emissions	45.89
<i>Site 5</i>	
On-road Emissions – Gravel from Sailor Bar	0.14
Equipment Exhaust Emissions (Extraction, Stockpiling, and Augmentation)	45.89
Worker Commute Exhaust	0.10
Total Daily Emissions	46.13
SMAQMD Thresholds (lb/day)	85

¹ Based on EMFAC2007 and OFFROAD2007 emission factors contained in URBEMIS Version 9.2.4, using general information provided in the project description (e.g., equipment list, stockpiling volumes and area, number of truck trips), and default model settings and parameters. Stockpiling is assumed to take place at one site at a time (i.e., trucks deliver the rock to only one site at a given time). Each construction activity would occur for 22 working days.

² Gravel extraction requires the use of 1 gravel-sorter and 1 front-end loader. Stockpiling requires the use of 1 front-end loader. Gravel augmentation requires the use of 3 front-end loaders, 1 bulldozer, and 1 excavator.

Source: Data modeled by EDAW 2008

The environmental effects on air quality for the alternative are the same as for the proposed action except that the NO_x emissions are slightly less for the Sailor Bar augmentation sites.

CUMULATIVE EFFECTS

As discussed above, project-generated construction-related mitigated criteria air pollutant and

precursor emissions would not exceed SMAQMD's significance thresholds. Thus, project-generated emissions would not result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

NOISE

The noise section of this EA is based on a report (Sacramento Area Water Forum 2008) prepared by EDAW for the Sacramento Area Water Forum.

Affected Environment

The loudness of sound preserved by the human ear is dependent primarily on the overall sound pressure level and frequency content of the sound source. The human ear is not equally sensitive to loudness at all frequencies in the audible spectrum. To better relate overall sound levels and loudness to human perception, frequency-dependent weighting networks were developed. The standard weighting networks are identified as A through E. There is a strong correlation between the way humans perceive sound and A-weighted sound levels, (abbreviated dBA). For this reason, the dBA can be used to predict community response to environmental and transportation noise. Sound levels expressed as dB in this section are A-weighted sound levels, unless noted otherwise.

The existing noise environment within the project area is typical of an open-space area within a suburban environment. The existing noise environment is primarily influenced by vehicular traffic noise on local and regional roadway network. Noise from interspersed industrial and commercial land uses, and outdoor activities (e.g., people talking, dogs barking, and operation of landscaping and agricultural equipment), contribute to the existing noise environment to a lesser extent.

Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects, as well as uses where quiet is an essential element of the intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. In the vicinity of the project site, sensitive land uses include the American River Parkway, the Lake Natoma portion of the Folsom Lake SRA, single-family and multi-family residential uses with direct line of site to the proposed gravel extraction and augmentation sites, and those located along proposed gravel haul routes. These land uses could potentially experience noise impacts associated with project construction and/or increased traffic from project operation.

An ambient noise survey was conducted by EDAW on March 18 and 19, 2008, to document the existing noise environment (e.g., sources) at various locations, specifically at noise-sensitive receptors, within the project area. Dominant noise sources identified during the ambient noise survey were the result of vehicle traffic on the local roadway network and recreational activities on the American River Parkway. Short-term noise level measurements were taken in accordance

with American National Standards Institute (ANSI) standards at eight locations. Ambient noise survey locations are shown in Figures 4-9 to 4-11. The equivalent noise level (L_{eq}), the maximum noise level (L_{max}), and the noise level exceeded 50% of the time (L_{50}) values taken at each ambient noise measurement location are presented in Table 4-4. During the survey, average daytime hourly noise levels within the project area ranged from approximately 42 dB to 56 dB L_{eq} , with maximum noise levels that ranged from 48 dB to 70 dB L_{max} .

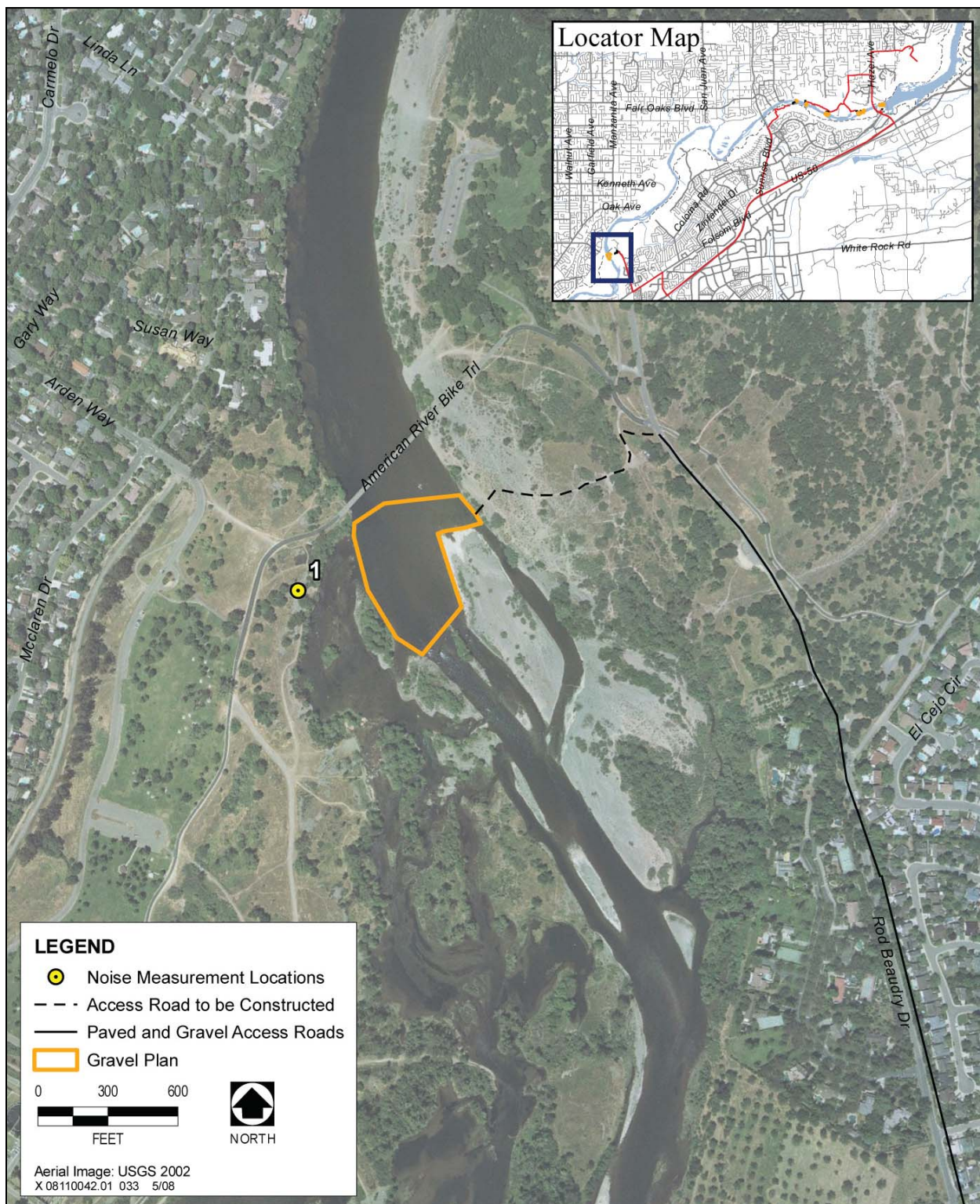


Figure 4-9. Ambient Noise Levels, Lower American River Salmonid Spawning Gravel Augmentation and Side-Channel Habitat Establishment Program



Figure 4-10. Ambient Noise Levels, Lower American River Salmonid Spawning Gravel Augmentation and

Side-Channel Habitat Establishment Program

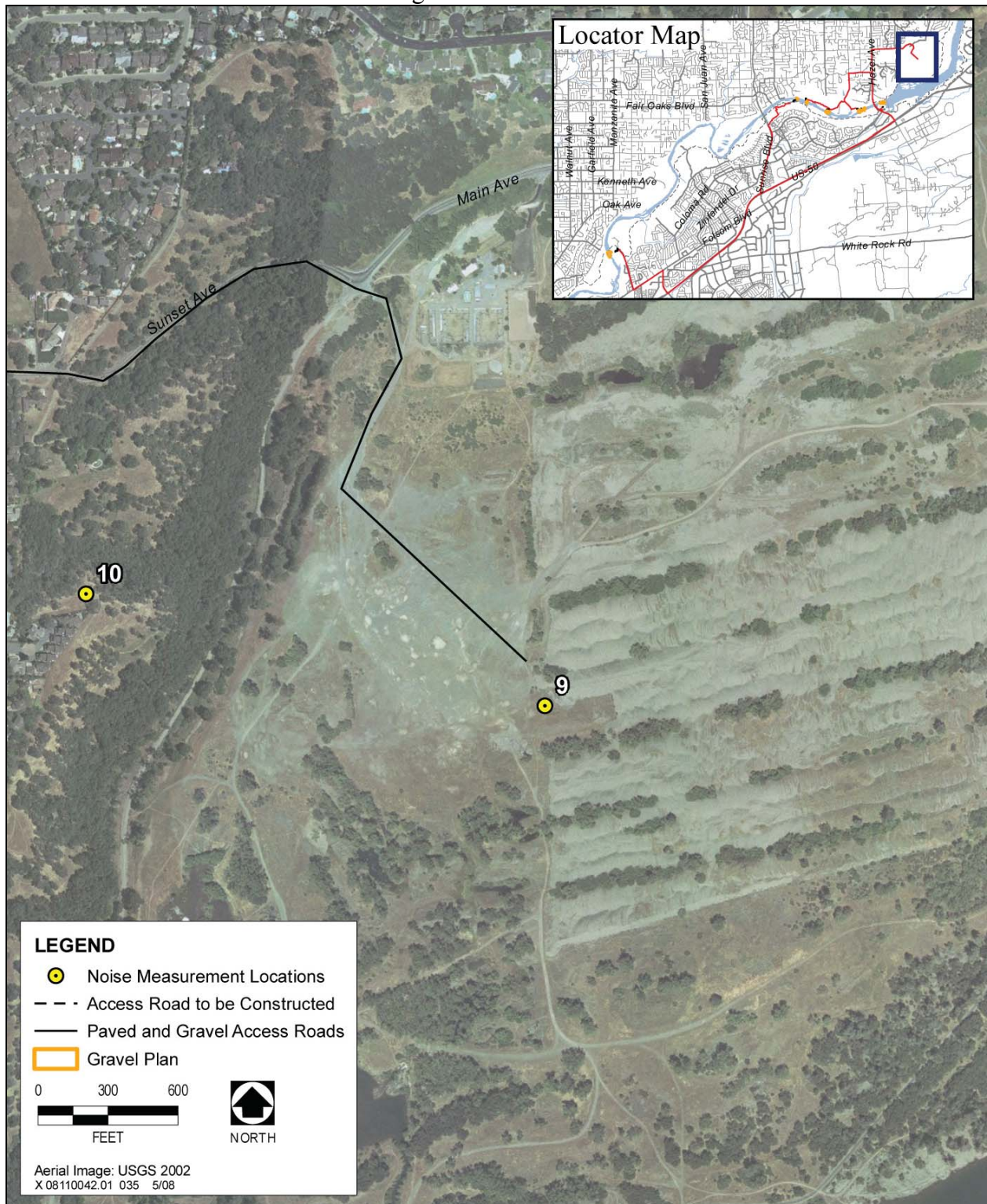


Figure 4-11. Ambient Noise Levels, Lower American River Salmonid Spawning Gravel Augmentation and Side-Channel Habitat Establishment Program

Table 4-5 Noise Survey Measurements					
Measurement Site	Location	Time	Average Measured Hourly Noise Levels, dB		
			L _{eq}	L ₅₀	L _{max}
1	Gravel Site 7 - William B. Pond Recreation Area	10:30 a.m.	55.2	53.3	70.5
2	Gravel Site 5 – Upper Sunrise Recreation Area	12:55 p.m.	47.1	42.2	60.7
3	Gravel Site 6 – Upper Sunrise Recreation Area	1:25 p.m.	49.3	44.4	66.1
4	Southern portion of Upper Sunrise Recreation Area	1:51 p.m.	42.4	42.1	48.4
5	Northwestern Portion of Sailor Bar	2:48 p.m.	42.8	40.2	53.3
6	Gravel Site 4 – Lower Sailor Bar	3:13 p.m.	42.6	39.0	55.7
7	Gravel Site 2 and 3 – Upper Sailor Bar	1:22 p.m.	56.6	56.3	62.2
8	Northeastern Portion of Sailor Bar	1:36 p.m.	44.7	44.5	48.8
9	Mississippi Bar	2:18 p.m.	43.6	40.9	58.2
10	Lake Natoma Bluffs	5:10 p.m.	46.0	42.9	58.8
Notes: dB = A-weighted decibels; L _{eq} = the equivalent hourly average noise level; L ₅₀ = the noise level exceeded 50% of a specific period of time; L _{max} = maximum noise level. Source: Data collected by EDAW 2008					

Table 4-5 summarizes the modeled traffic noise levels, 100 feet from the centerline of each roadway proposed for use associated with the project. Traffic noise modeling is based on existing average daily traffic (ADT) volumes, and lists distances from roadway centerlines to the 60 dB, 65 dB, and 70 dBL_{dn} traffic noise contours. As shown in Table 4-6, the location of the 60 dBL_{dn} contour ranges from 54 to 1,272 feet from the centerline of the modeled roadways. The extent to which existing land uses adjacent to project roadway are affected by existing traffic noise depends on their respective proximity and their individual sensitivity to noise. L_{dn} is the equivalent day-night noise level, with a penalty assessed for noise occurring during nighttime periods.

Table 4-6 Summary of Modeled Existing Traffic Noise Levels					
Roadway	Segment Location	L _{dn} , 100 feet from Roadway Centerline	Distance (feet) from Roadway Centerline to L _{dn} Contour		
			70 dB	65 dB	60 dB
Folsom Boulevard	Mather Field Dr to Rod Beaudry Dr	65.5	50	107	231
Hazel Avenue	Sunset Ave to Route 50	67.1	64	138	297

Table 4-6 Summary of Modeled Existing Traffic Noise Levels					
Roadway	Segment Location	L _{dn} , 100 feet from Roadway Centerline	Distance (feet) from Roadway Centerline to L _{dn} Contour		
			70 dB	65 dB	60 dB
Illinois Avenue	Winding Way to Sailor Bar	51.3	6	12	26
Mather Field Road	Route 50 to Folsom Blvd	63.8	38	83	178
Rod Beaudry Drive	Folsom Blvd to C.M. Goethe Park	-- ¹	--	--	--
Route 50	Hazel Avenue to Mather Field Dr	76.6	274	590	1,272
Sunrise Boulevard	Route 50 to South Bridge St	71.6	128	276	595
Sunset Avenue	Hazel Avenue to Mississippi Bar	58.9	18	39	84
Winding Way	Illinois Ave to Hazel Ave	56.0	12	25	54
¹ Traffic volume unknown Notes: dB = A-weighted decibels; L _{dn} = day-night average noise level Source: Modeled by EDAW 2008					

Environmental Consequences

With regard to human perception of increases in sound levels expressed in dB, a change of 1 dB is generally not perceivable excluding controlled conditions and pure tones. Outside of controlled laboratory conditions, the average human ear barely perceives a change of 3 dB. A change of 5 dB generally fosters a noticeable change in human response, and an increase of 10 dB is subjectively heard as a doubling of loudness.

The significance criteria outlined in Table 4-7 are considered to correlate well with human response to changes in ambient noise levels and assess degradation of ambient community noise environment.

Table 4-7 Significant Change in Ambient Noise Levels	
Existing Ambient Noise Level, L _{dn} /CNEL	Significant Increase
<60 dB	+ 5 dB or Greater
>60 dB	+ 3 dB or Greater
Source: Adapted from: Federal Interagency Committee on Noise (FICON) 1992, Caltrans 1998	

Reclamation has incorporated four BMP's into the project description to reduce noise impacts for the proposed action and the alternative action. They are described in the project description section of this EA.

NO ACTION ALTERNATIVE

The No Action Alternative would not involve any changes to the existing noise conditions.

PROPOSED ACTION

Constructing and implementing the proposed project would occur in several distinct phases; each phase requires a specific complement of equipment with varying equipment type, quantity, and intensity. These variations in the operational characteristics of the equipment change the effect they have on the noise environment in the project vicinity. Construction noise effects largely depend on the construction activities being performed on a given day, noise levels generated by those activities, distances to noise-sensitive receivers, and the existing ambient noise environment at the receptors.

On-site construction activities associated with the proposed project would involve gravel extraction, processing, stockpiling, and deposition, with additional activities focused on constructing side channels at three of the proposed augmentation sites. Table 4-8 depicts construction equipment associated with various phases of the proposed project and construction equipment reference noise levels at a distance of 50 feet from the acoustical center of operation.

Table 4-8 Construction Equipment Noise Emission Levels		
Equipment Type (Quantity)¹	Typical Noise Level at 50 feet, dB	Usage Factor
Gravel Extraction and Processing		
Front-end Loader (1)	80	0.4
Generator (1)	70	0.5
Dump Truck (1)	84	0.4
Gravel Screener/Sorter (1) ²	85	1.0
Stockpiling		
Front-end Loader (1)	80	0.4
Trucks (1)	84	0.4
Gravel Deposition		
Front-end Loader (3)	80	0.4
Dozer (1)	85	0.4
Excavator (1)	85	0.4
Trucks (1)	84	0.4

Side Channel Cutting		
Front-end Loader (1)	80	0.4
Dozer (1)	85	0.4
Scraper (1)	85	0.4
Trucks (1)	84	0.4

¹ Number of individual equipment types under simultaneous operation.
² Noise levels provided by U.S. Bureau of Reclamation (Hall, pers comm. 2008)
Notes: dB = A-weighted decibels;
*All equipment fitted with properly maintained and operational noise control device, per manufacturer specifications.
Source: Data Compiled by EDAW 2008; FHWA 2006, FTA 2006.

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes, mobile and fixed. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., loaders, graders, dozers). Fixed equipment operates in a given location for an extended period of time to perform continuous or periodic tasks (e.g., jack hammers, power saws, pumps). Accordingly, it is necessary to determine the location of stationary sources during specific phases, and the effective acoustical center of operations for mobile equipment during various phases of the construction process. Operational characteristics of heavy construction equipment are additionally typified by short periods of operation at full power followed by extended periods of operation at lower power, idling, or powered-off conditions. To more accurately account for variations in equipment power expenditures, “usage factors” based on duty cycle are applied to reference noise levels.

As indicated in Table 4-8, operational noise levels for typical construction activities would range from 70 dB to 85 dB at a distance of 50 feet. Accounting for the usage factor of individual pieces of equipment, topographical shielding and ground absorption effects, construction activities on the project site would be expected to result in equivalent hourly average noise levels ranging from approximately 81 dB to 87 dB Leq, at a distance of 50 feet, depending on project phase. Noise levels generated by various phases of project implementation and the distance to noise level contours are presented in Table 4-9.

Table 4-9 Overall On-Site Construction Noise Levels				
Project Phase	L₅₀ at 50 feet¹	Distance (feet) to L₅₀ Contour¹		
		70 dB	55 dB	50 dB
Gravel Extraction and Processing	86.6 dB	232	922	1,461
Stockpiling	81.5 dB	144	573	908
Gravel Deposition	83.9 dB	180	717	1,137
Side Channel Cutting	85.9 dB	217	865	1,371

¹ Measured from the acoustical center of construction activities.
Notes: dB = A-weighted decibels; L₅₀ = noise level exceeded 50% of a specified period of time
Source: Data Modeled by EDAW 2008

As presented in the project description of this EA, the proposed project will incorporate four BMPs for the control of construction noise levels. Implementation of the following BMPs generally results in reduction of construction-generated noise levels by 15 dB to 25 dB. Mitigated construction noise levels are presented in Table 4-10.

BMP 1: Minimize Construction Activities During Noise-Sensitive Hours. Construction operations and related activities associated with the proposed project shall comply with the operational hours outlined in the Sacramento County Code Noise Ordinance; construction operations shall be limited to between the hours of 6 a.m. and 8 p.m. Monday through Friday, between 7 a.m. and 8 p.m. on Saturday, and between 8 a.m. and 8 p.m. on Sunday.

BMP 2: Maintain and Equip Construction Equipment with Noise Control Devices. Construction equipment shall be properly maintained per manufacturers' specifications and fitted with the best available noise suppression devices (i.e., mufflers, silencers, wraps, etc); including shrouding or shielding all impact tools, and muffling or shielding all intake and exhaust ports on power equipment.

BMP 3: Arrange Construction Equipment Travel to Minimize Disturbance to Noise-Sensitive Uses. Construction equipment usage shall be arranged to minimize travel adjacent to occupied residences and turned off during prolonged periods of non-use. Stationary construction equipment and staging areas shall be located as far as possible from sensitive receptors, and temporary acoustic barriers may be installed around stationary equipment if necessary.

BMP 4: Designate a Disturbance Coordinator to Receive and Respond to All Public Complaints. The project applicant shall designate a disturbance coordinator. That person's telephone number shall be conspicuously posted around the project site and supplied to nearby residences. The disturbance coordinator shall receive all public complaints and be responsible for determining the cause of the complaint and implementing any feasible measures to alleviate the problem (e.g., revised construction hours, use of alternative equipment, and installation of temporary construction noise barriers). Additionally, in advance of noise-generating construction operations, the disturbance coordinator shall advise nearby noise-sensitive receptors of the construction schedule at least 72 hours prior to construction activities.

Based on construction noise modeling and the incorporation of the above BMPs, implementation of the proposed action would comply with the Sacramento County Code exterior noise level standard of 55 dB L_{50} at noise-sensitive in the project vicinity.

Table 4-10 Mitigated On-Site Construction Noise Levels				
Project Phase	L ₅₀ at 50 feet ¹	Distance (feet) to L ₅₀ Contour ¹		
		70 dB	55 dB	50 dB
Gravel Extraction and Processing	71.6 dB	60	338	601
Stockpiling	66.5 dB	33	188	334
Gravel Deposition	68.9 dB	44	248	441
Side Channel Cutting	70.9 dB	55	312	555
¹ Measured from the acoustical center of construction activities. Notes: dB = A-weighted decibels; L ₅₀ = noise level exceeded 50% of a specified period of time Source: Data Modeled by EDAW 2008				

The proposed project would increase traffic volumes due to the addition of construction-generated traffic. Construction-generated traffic volumes would be dependent on material requirements, material availability, and project phase.

Material requirements for all gravel augmentation sites would be fulfilled from gravel extraction at Mississippi Bar. As such, all materials would be transported over designated haul routes on the local roadway network, thus increasing traffic volumes along affected roadway segments.

To examine the effects of project-generated traffic increases, traffic noise levels associated with the proposed project were calculated for roadway segments in the project study area using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). Traffic noise levels were modeled under existing (2007) conditions, with and without implementation of the proposed project. ADT volumes and the distribution thereof were obtained from the Traffic section of this EA. Vehicle speeds and truck volumes on local area roadways were determined based on field observations and vehicle counts conducted by EDAW. Table 4-11 summarizes the modeled traffic noise levels at 100 feet from the centerline of affected roadway segments along proposed haul routes. Additional input data included day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths.

Table 4-11 Predicted Traffic Noise Levels Material Supplied from Mississippi Bar					
Roadway	Segment Location	L _{dn} at 100 Feet, dB ¹			
		No Project	Plus Project	Net Change	Significant Impact?
Site 1					
Sunset Boulevard	Hazel Avenue to Mississippi Bar	59.5	60.2	+0.7	No
Hazel Avenue	Sunset Ave to Route 50	70.4	70.4	+0.1	No
Sites 2 and 3					
Sunset Boulevard	Hazel Avenue to Mississippi Bar	59.5	60.1	+0.6	No
Hazel Avenue	Sunset Ave to Route 50	70.4	70.4	+0.1	No
Winding Way	Illinois Ave to Hazel Ave	54.0	55.8	+1.8	No
Illinois Avenue	Winding Way to Sailor Bar	52.0	54.6	+2.6	No
Site 4					
Sunset Boulevard	Hazel Avenue to Mississippi Bar	59.5	60.9	+1.4	No
Hazel Avenue	Sunset Ave to Route 50	70.4	70.5	+0.2	No
Winding Way	Illinois Ave to Hazel Ave	54.0	57.9	+3.9	No
Illinois Avenue	Winding Way to Sailor Bar	55.0	58.3	+3.3	No
Site 5					
Sunset Boulevard	Hazel Avenue to Mississippi Bar	59.5	60.0	+0.5	No
Hazel Avenue	Sunset Ave to Route 50	70.4	70.4	+0.1	No
Winding Way	Illinois Ave to Hazel Ave	54.0	55.7	+1.7	No
Illinois Avenue	Winding Way to Sailor Bar	55.0	56.4	+1.4	No
Site 6					
Sunset Boulevard	Hazel Avenue to Mississippi Bar	59.5	59.7	+0.2	No
Hazel Avenue	Sunset Ave to Route 50	70.4	70.4	<+0.1	No
Route 50	Hazel Avenue to Mather Field Dr	76.3	76.3	<+0.1	No
Sunrise Boulevard	Route 50 to South Bridge St	72.3	72.3	<+0.1	No
Site 7					
Sunset Boulevard	Hazel Avenue to Mississippi Bar	59.5	60.6	+1.0	No
Hazel Avenue	Sunset Ave to Route 50	70.4	70.5	+0.1	No
Route 50	Hazel Avenue to Mather Field Dr	76.3	76.3	+0.0	No
Mather Field Road	Route 50 to Folsom Blvd	64.4	64.8	+0.4	No
Folsom Boulevard	Mather Field Dr to Rod Beaudry Dr	66.1	66.4	+0.3	No
Notes: dB = A-weighted decibels; L _{dn} = day-night average noise level ¹ Model assumes no natural or human-made shielding (e.g., vegetation, berms, walls, buildings). Source: Data modeled by EDAW 2008					

Based on volume, trip generation, and distribution data, future traffic noise levels with and without the project would exceed the Sacramento County General Plan Noise Element criteria of 60 dB L_{dn} at single family residential land uses located adjacent to the proposed material haul routes. As shown in Table 4-11, project-generated traffic noise increases would range from less than +0.1 dB to +3.9 dB L_{dn} . As presented in Table 4-7, a project-related noise level increase of +5 dB or greater would be significant where ambient noise levels are less than 60 dB L_{dn} /CNEL; +3 dB where ambient noise levels exceed 60 dB L_{dn} /CNEL.

The proposed project is short-term in nature and does not contain long-term operational noise sources. Thus, the proposed project would not expose people to long-term operational noise levels exceeding applicable noise standards.

The proposed project would not involve the use of any equipment or processes that would generate potentially high levels of ground vibration, such as pile drivers or blasting. Construction operations associated with the proposed project would be anticipated to include backhoes, loaders, excavators, and trucks; and no pile driving would occur. As a result, the proposed project would have no impact with respect to the exposure to or generation of excessive ground-borne noise or vibration levels.

The proposed project is short-term in nature and does not contain long-term operational noise sources (e.g., mechanical equipment, generators, public address systems, etc.). Thus, the proposed project would not expose people to long-term operational noise levels exceeding applicable noise standards. As a result, the proposed project would have no impact with respect to long-term operational noise.

The project site is not located within 2 miles of an airport land use plan or in the vicinity of a private airport. Thus, the proposed project would not expose people residing or working in the project area to excessive noise levels because of aircraft activity at private airports. As a result, the proposed project would have no impact with respect to airport noise.

ALTERNATIVE ACTION

The noise effects of the alternative is the same as for the proposed action, except haul trucks would not be traveling on the public road system for gravel augmentation sites 2, 3, 4, and 5; and gravel processing for those sites would be at Sailor Bar. Noise levels from traffic on the public road system are shown in 4-9 for Sites 1, 6, and 7.

Noise levels generated in association with gravel processing activities are shown in Table 4-9. Assuming all construction equipment associated with the sailor bar gravel processing complies with BMPs 1 through 4, and gravel extraction and processing is conducted more than 340 feet from noise-sensitive land uses in the project vicinity; noise levels generated by gravel extraction and processing would not exceed 55 dB L_{50} . The proposed alternative action would be expected to comply with the Sacramento County exterior noise level standards.

CUMMULATIVE EFFECT

The proposed and alternative actions would not result in adverse cumulative noise impacts. Project generated noise level would be short-term in nature and would not contain any long-term operations. Thus implementation of the proposed project would not result in cumulative noise level increases at sensitive receptors in project vicinity. Additionally, cumulative noise effects would be the same under the No Action, Proposed Action, and Alternative Action conditions.

CULTURAL RESOURCES

Cultural resources is a term used to describe both ‘archaeological sites’ depicting evidence of past human use of the landscape, the ‘built environment’ which is represented in structures such as dams, roadways, and buildings, and sites of religious and cultural significance for Native Americans including Traditional Cultural Properties. The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary Federal legislation which outlines the Federal Government’s responsibility to cultural resources. Other applicable cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPA) and the Archaeological Resources Protection Act (ARPA). Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking listed on cultural resources on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking would have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office (SHPO), to seek concurrence on Reclamation’s findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

A cultural resource inventory of the project area was conducted by EDAW (Sacramento Region Water Forum 2008b). The inventory resulted in three archaeological sites and one isolate cultural resource being identified. Two of the archaeological sites are the dredger tailings at Mississippi Bar and Sailor Bar. The third archaeological site is a bedrock mortar feature that was submerged under the American River at the time of the inventory. The isolate is a heavily rusted frame made from ‘I’ beams. Both the Sailor Bar dredge tailings (gravel acquisition site 1) and Mississippi Bar Dredge Tailings (gravel acquisition site 2) have been determined eligible for inclusion in the National Register.

Environmental Consequences

NO ACTION

Under the No Action Alternative, the existing cultural resources conditions would continue.

PROPOSED ACTION

Under this alternative, there would be impacts to one historic property, the Mississippi Bar dredge tailings. The gravel acquisition would not occur within the four designated areas of the site that were determined by EDAW to have high interpretive value. Because gravel acquisition would not alter those locations, the proposed action would have no adverse effect on historic properties pursuant to 36 CFR Part 800.5(b). Reclamation will consult with the SHPO and seek their concurrence on this finding that there will be no adverse effect to historic properties. Upon concurrence from the SHPO on Reclamation's finding of effect, the Section 106 process will be complete. If the SHPO disputes with Reclamation's findings, Reclamation will either provide additional information to the SHPO to support the findings of effect or seek to resolve adverse effects through the implementation of a Memorandum of Agreement. Reclamation can choose to conclude the Section 106 process if the SHPO does not respond to Reclamation's request for concurrence within the time provided to them in the regulations at 36 CFR Part 800. Since gravel acquisition would not adversely affect Mississippi Bar dredge tailings, that action would have no impacts to cultural resources.

In the event of an unanticipated archaeological discovery, the project will cease operations and a member of Reclamation's cultural resource staff will be contacted immediately. Reclamation's cultural resource staff will provide direction on how to proceed and conduct any necessary correspondence and mitigation.

In the unlikely event that human remains are uncovered during this undertaking, the project will cease immediately and Reclamation cultural resource staff will be contacted. Reclamation's cultural resource staff will provide direction on how to proceed. If human remains are discovered on lands under the jurisdiction of Reclamation, they will be treated in accordance to the provisions of the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C 3001). If human remains are discovered on lands owned by any other non-federal entity, they will be treated in accordance to the provisions in the California Health and Safety Code (HSC 7050.5).

ALTERNATIVE ACTION

If gravel is acquired at both Mississippi Bar and Sailor Bar, two historic properties would be affected. EDAW (Sacramento Region Water Forum. 2008b) evaluated the Sailor Bar dredge tailings and recommends them eligible for inclusion in the National Register. Two elements of Sailor Bar possess a high degree of integrity and interpretive value (Sacramento Region Water Forum. 2008b). Under this alternative, Reclamation would utilize gravel from Sailor Bar

including the two elements of Sailor Bar determined to possess a high degree of integrity and interpretive value. Pursuant to the Section 106 regulations at 36 CFR Part 800.5(a), the acquisition of gravel from the two sensitive locations at the Sailor Bar dredge tailings would constitute an adverse affect to historic properties.

Mississippi Bar includes four elements of high interpretive value and EDAW (Sacramento Region Water Forum 2008b) recommends that these areas constitute the most significant areas of the site. Reclamation does not plan to remove any gravel from the four elements of Mississippi Bar that possess high interpretive value. If the sensitive locations are not utilized for gravel acquisition, then the result would be no adverse effect to historic properties pursuant to 36 CFR Part 800.5(b).

If Reclamation chooses to pursue this alternative in the future, it would consult with the SHPO seeking their concurrence on the above described findings of effect. In order to mitigate the adverse effect to the Sailor Bar site, Reclamation would enter into a memorandum of agreement (MOA) with the SHPO and other appropriate parties. Once the MOA is signed and implemented and adverse effects are mitigated, the proposed alternative would result in no impacts to cultural resources.

CUMULATIVE EFFECTS

Future gravel extraction activities at Sailor Bar and Mississippi Bar that extend beyond the current proposed boundaries could result in adverse effects to these two sites. If adverse effects are identified as a result of future gravel acquisition activities, the lead Federal agency may enter into a MOA to mitigate those impacts.

RECREATION

Affected Environment

The gravel augmentation sites and the Sailor Bar gravel acquisition site are located within the American River Parkway, administered by the Sacramento County Department of Regional Parks. The Mississippi Bar gravel acquisition site is located within the Folsom Lake State Recreation Area administered by the California Department of Parks and Recreation, through a contract with the U.S. Bureau of Reclamation. A portion of the project area within Folsom Lake SRA is on land owned by the State of California.

Both the American River Parkway and the Folsom State Recreation Area provide a wide range of recreational opportunities including boating, bicycling, hiking, jogging, horseback riding, fishing, bird watching, dog walking, and picnicking. In particular, Sailor Bar is a very popular fishing, boating, hiking, and dog walking area and contains equestrian trails. In addition, the Jedediah Smith Trail at Upper Sunrise, and American River South is very popular with cyclists, joggers, and hikers. A spur off the Jedediah Smith Trail passes under Hazel Avenue and crosses the entrance road to Nimbus Shoals. The area at Mississippi Bar is used mostly for horseback riding, hiking, and dog walking. Shadow Glenn Riding Stable is located at Mississippi Bar, as

are a number of walking trails and a paved bicycle path.

Nimbus Shoals is presently closed to boating and rafting. However, the Preliminary GP/RMP for FLSRA proposes to develop a hand launch access point at this location when Reclamation removes the present fish weir. At gravel augmentation sites 2 and 3, there is little boating activity, since there is no access upstream of the boat ramp at Sailor Bar. There is light boat traffic, primarily canoes, kayaks and drift boats between Sailor Bar and Upper Sunrise. The major raft put in is at the Sunrise access area where American River Raft Rental has a large concession on the south side of the river and River Rat has a more modest concession on the north side. The take out for American River Raft Rental is upstream of Site 7 at Arden Rapids. The take-out for River Rat is at Harrington Drive, downstream of Site 7. Boating usage is much higher during weekends and holidays, than it is during the week.

Fishing is particularly popular at Sailor Bar and Nimbus Shoals, and numbers of fishers increases during late summer into early fall, as returning salmon become more numerous. The river is closed to fishing from November 1 through December 31 from the Hazel Avenue Bridge to Ancil Hoffman Park, when the bulk of the salmon spawn. The area around Upper Sunrise is a popular spot for steelhead fishing during the winter, and the area above Arden Rapid is popular for shad fishing in the spring. In 2008 all salmon that are caught in the LAR must be returned (due to severely depleted stocks), therefore the number of fishers is expected to be less than previous years.

Environmental Consequences

NO ACTION ALTERNATIVE

The No Action Alternative would not involve any changes to the existing recreation.

PROPOSED ACTION

The gravel acquisition site at Mississippi Bar may be temporarily fenced during the one or two month construction period each year. The area fenced would be adjacent to dredger tailings and be in an area not highly traveled by recreationists. An access road across the previously mined adjacent state land would likely be marked to control where trucks traveled, but probably not impede pedestrians.

At all gravel augmentation and side channel sites boating traffic is fairly light during weekdays when construction would be taking place. The river is wide enough for any boats to go around construction vehicles. Signs would be posted upstream of construction areas to warn boaters.

In river work would be done from July through September. During July and August a few fishers are seeking early returning salmon, and the number of fishers increase in September, probably peaking in October, before the upper river is closed to fishing. Fish encountering construction equipment in the water are expected to leave the site. Therefore, those areas would essentially, not be available to fishers. In any one year, the size of the construction site to the areas inhabited by fish in the rest of the river is fairly small and fishers should be able to find

good fishing elsewhere during the construction period.

Haul trucks and equipment would cross the Jedediah Smith Trail and equestrian trail at gravel augmentation site 1 and side-channel site 3. Haul trucks and equipment would cross the trail spur at gravel augmentation site 1 and side channel site 1. During construction, these trails would be signed, cautioning users that equipment would be crossing. During times when there is repetitive trucks crossing the trails when gravel is being delivered, a flag person would be present.

ALTERNATIVE ACTION

The alternative gravel acquisition site at Sailor Bar would be temporarily fenced during the one or two month construction period each year, and the access road along the river would be closed to vehicles on week days during that time. This road is lightly used at the time it would be closed.

CUMMULATIVE EFFECT

Several projects would be occurring in the American River Parkway that would cumulatively affect recreation. The projects are the Hazel Avenue Widening Project, the Nimbus Hatchery Fish Ladder, and the Lower Sunrise Side-Channel Project. The construction sites would likely be off limits to recreationists, and they would have to pursue their activities elsewhere.

CONSULTATION AND COORDINATION

APPLICABLE LAWS AND REGULATIONS

Federal Requirements

National Environmental Policy Act of 1970

The National Environmental Policy Act (NEPA) process is intended to help public officials make decisions that are based on an understanding of environmental consequences and take actions that protect, restore, and enhance the environment. Regulations implementing NEPA are set forth by the Council on Environmental Quality (CEQ). Reclamation has followed NEPA and CEQ regulations in the development of the Lower American River Salmonid Spawning Gravel Augmentation and Side-Channel Habitat Establishment Program EA.

Section 404 of the Clean Water Act

The project will result in work in jurisdictional waters of the United States (American River) and may result in fill of jurisdictional wetlands and other waters of the United States (ponds and associated wetlands) located on low terraces adjacent to the river and will therefore require a CWA Section 404 permit from the U. S. Army Corps of Engineers (Corps). Issuance of a permit typically requires a verified wetland delineation and submittal of a permit application. Preliminary consultation with the Corps indicates the Program would likely qualify for an individual permit. Reclamation submitted an application in May 2008.

Section 10 of the Rivers and Harbors Act

The Corps considers navigable waters, subject to Section 10, to extend from the mouth of the American River, upstream 12 miles near Bradshaw Road. The furthest downstream gravel augmentation site is at RM 13.6, 1.6 miles upstream of the jurisdictional reach, therefore the Program does not fall within the jurisdiction of Section 10.

Section 401 of the Clean Water Act

Prior to the issuance of a Section 404 Permit, Reclamation must obtain a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB). This declaration states that any discharge complies with all applicable effluent limitations and water quality standards. Reclamation submitted an application to the RWQCB in May 2008.

National Pollution and Discharge Elimination System Program

The project would not discharge any waste into local waterways, so a National Pollution and Discharge Elimination General Storm Water Permit for Construction Activities is not required.

Endangered Species Act of 1973

The project has the potential to adversely affect federally listed fish and wildlife species. Reclamation has received a threatened and endangered species list from the FWS. Reclamation requested concurrence from FWS and NOAA Fisheries on May 8, 2008 that the proposed action is not likely to adverse affect the federally-listed threatened valley elderberry long-horned beetle, the federally listed threatened Central Valley steelhead, their respective designated critical

habitat, or Essential Fish Habitat of the Pacific Salmon.

Executive Order 11990: Protection of Wetlands

Executive Order (EO) 11990 established the protection of wetlands and riparian systems as the official policy of the federal government. It requires all federal agencies to consider wetland protection as an important part of their policies and take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Preliminary consultation with the Corps regarding Section 404 compliance has taken place. Any measures implemented to protect and restore wetlands as part of the 404 permitting process will likely be sufficient to satisfy compliance with EO 11990.

Executive Order 11988: Flood Plain Management

EO 11988 requires Reclamation to regulate development in floodplains and preserve the floodplains' natural and beneficial values. Measures to comply with EO 11988 have been integrated into the project.

Executive Order 11312: Invasive Species

EO 11312 (February 3, 1999) directs all federal agencies to prevent and control introductions of invasive nonnative species in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. The Program includes measures to comply with EO 11312.

Clean Air Act

Because the project involves ground-disturbing activities with the potential to result in fugitive dust emission impacts and the use of heavy construction machinery that generates emissions potentially harmful to humans, coordination with SMAQMD is required. The EA prepared for this project contains environmental-commitment measures aimed at fulfilling the requirements of the SMAQMD. Implementation of these measures is expected to reduce short-term mobile emissions but not below SMAQMD threshold limits. No further action is required.

National Historic Preservation Act of 1966, 16 U.S.C. Section 470 et seq., as amended

The purpose of this act is to protect, preserve, rehabilitate, or restore significant historical, archeological, and cultural resources. Based on the results of a cultural inventory and the evaluation of the historic property present in the project area, the proposed action would have no adverse affect to historic properties pursuant to 36 CFR Part 800.5(b). Reclamation would consult with the SHPO and seek their concurrence on this finding of effect.

National Wild and Scenic Rivers System

Section 7 of the Wild and Scenic Rivers Act directs federal agencies to implement protection measures to ensure the preservation of the wild and scenic character of rivers protected under the Act. Evaluation procedures under the direct and adverse effects standards from federally assisted projects inside the designated river are required under Section 7(a) of the Act and in consultation with the National Park Service (NPS). NPS has concluded that the proposed action would not have a direct and adverse effect on the values for which the river was designated (Appendix C).

State Laws, Regulations, and Policies

California Environmental Quality Act (CEQA)

The CEQA process is intended to help public officials make decisions that are based on an understanding of environmental consequences and take actions that protect, restore, and enhance the environment. Reclamation must acquire a Section 401 Water Quality Certification from the RWQCB, an Encroachment Permit from Sacramento County Regional Parks, and a Right of Entry Permit from State Parks which may require compliance with CEQA.

Encroachment Permit from the California Reclamation Board

It has been determined that the project will not require an encroachment permit from the Reclamation Board.

Section 1602 of the California Fish and Game Code

Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify the Department of Fish and Game (DFG) before beginning any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Under such cases, a streambed alteration agreement would be prepared between DFG and the agency or person. DFG has said that Reclamation does not need a streambed alteration agreement for the project.

California Endangered Species Act

No species listed pursuant to the California Endangered Species Act would be affected by this program.

Coordination with State Lands Commission

The project involves work affecting the American River. The land under the river is owned by the State Lands Commission. Discussion with the Commission indicates that a lease will not be needed.

Local Laws, Regulations, and Policies

American River Flood Control District

Coordination with the American River Flood Control District (District) has taken place, and Reclamation has sent information to the District for a determination whether a permit will be required.

Encroachment Permit from Sacramento County Department of Regional Parks

Most of the gravel augmentation sites are in the American River Parkway, and Sacramento County Department of Regional Parks will have to issue an encroachment permit to Reclamation for the work to proceed.

California Department of Parks

In order to access Mississippi Bar, equipment will have to cross land owned by California Department of Parks. Parks will have to issue a right of entry permit to Reclamation for the crossing.

COORDINATION

Because much of the work would be conducted within the American River Parkway, the Program has been closely coordinated with the County of Sacramento Department of Regional Parks.

PUBLIC INVOLVEMENT

This Program is the culmination of many years of coordination and deliberation among agency, environmental and other stakeholders. Passage of the Central Valley Improvement Act in 1992 recognized the need for restoring spawning gravel and spawning and rearing habitat downstream of Nimbus Dam. In 1999, DFG did some gravel augmentation and manipulation under the CVPIA.

During the late 1990's two separate, but related coordination activities were underway. The Lower American River Task Force (LARTF) was primarily focused on issues related to flood control. The Sacramento Area Water Forum (WF) was primarily focused on securing a reliable water supply and protecting the environmental and aesthetic values of the LAR. Both these groups were comprised of multi-agency and multi-disciplinary people. These groups coalesced in preparing a River Corridor Management Plan (RCMP) in January 2002. The fisheries and in-stream habitat management portions of the RCMP is comprised of the "Initial Fisheries and In-Stream Habitat Management and Restoration Plan for the Lower American River" which was completed by the Lower American River Fisheries and In-Stream Habitat (FISH) Working Group in October 2001 (SWRI 2001). Known as the FISH Plan, this document contained recommendations for restoring gravel and side-channel habitats in the LAR.

The FISH Group, primarily supported by the Water Forum, continues to evaluate opportunities for enhancing fishery resources in the LAR. The Water Forum sponsored a meeting on June 13, 2005 to discuss options for the river segment just below Nimbus Dam. Another meeting was held on April 28, 2006 to define a specific gravel augmentation project on the LAR.

In 2006, Reclamation and the Water Forum entered into a five year grant by which the Water Forum would assist Reclamation in conducting a gravel augmentation/habitat improvement program on the LAR. On December 17, 2007, the Water Forum and Reclamation conducted an agency scoping meeting where additional alternatives were identified.

Several public meetings have been held. Reclamation met with the Bluffs Home Owners Association on August 21, 2007 to inform them of gravel deliveries to be stockpiled at Sailor Bar. A public scoping meeting was held on February 11, 2008 at the Sacramento State Aquatic Center. In addition, Reclamation gave presentations to the American River Coalition on

February 8, 2008; The American River Parkway Advisory Committee on February 15, 2008; and The Recreation and Parks Commission on March 27, 2008.

Sacramento Regional Park's staff has participated in field trips and briefings. Issues raised at these meetings have been included in this EA.

A compilation of comments received during scoping is included in Appendix A.

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REFERENCES

- ARB, 2008. California Air Resources Board (ARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available: <http://www.arb.ca.gov/ch/march_29_aq_handbook.pdf>. Accessed April 2008.
- California Regional Water Quality Control Board. 1998. *Water Quality Control Plan (Basin Plan) Central Valley Region*. Sacramento, CA.
- California Department of Parks and Recreation and Department of Interior, Bureau of Reclamation. 2007. *Folsom Lake State Recreation Area General Plan/Resource Management Plan and Environmental Impact Report/Environmental Impact Statement*. Folsom, CA.
- California Department of Transportation (Caltrans). 1998 . *Technical Noise Supplement*. Sacramento, CA. October 1998.
- California Department of Transportation. 2007. *2006 Traffic Volumes on the California State Highway System*. Traffic Operations Division. December 2006.
- California Department of Transportation (Caltrans). 2007 *2006 Average Annual Daily Truck Traffic on the California State Highway System*. Sacramento, CA. (December).
- Fairman, David. 2007. A Gravel Budget for the Lower American River. Fall 2007.
- Federal Transit Administration (FTA). 2006 . *Transit Noise and Vibration Impact Assessment*. Washington, DC. Prepared by: Harris Miller Miller & Hanson Inc., Burlington, MA. May 2006.
- Federal Highway Administration (FHWA). 1978. (*Federal Highway Traffic Noise Prediction Model FHWA RD 77-108*. Washington DC. December 1978.
- Federal Highway Administration (FHWA). 2006 (January). *Roadway Construction Noise Model Version 1.0 (FHWA RCNM V. 1.0)*. Washington DC. January 2006.
- Hannon, John. 2007. “20070413 AmR Steelhead Presentation. PDF” presented at the American River Conference, April 12-13, 2007.
- Healey 2008. Oral report to the American River Operations Group, February 5, 2008.
- Merz, Joe. 2008. Personal Communication. February 14, 2008.
- National Park Service, 2008. Letter from the National Park Service to Bureau of Reclamation, April 16, 2008.
- Phillip Williams & Associates, Ltd. 2007. Memorandum from Site Visit. December 4, 2007.

Rimpo, 2008. Rimpo Associates (Rimpo). 2008. *URBEMIS2007 for Windows, Version 9.2.4*. Available: <<http://www.urbemis.com/software/download.html>>. Access March 2008.

Sacramento County, 2004. Traffic Impact Analysis Guidelines. July 2004.

Sacramento County, 2007. Traffic Volume Flow Map. Municipal Services Agency, Department of Transportation, 2007.

Sacramento County Department of Planning. 1993. County of Sacramento General Plan. Sacramento, CA. December 1993.

Sacramento County Water Agency, 1995. *1994/1995 Annual Monitoring Report*. Sacramento, CA. December 1995.

Sacramento Region Water Forum. 2008a. *Air and Noise Effects Analysis for the American River Gravel Augmentation Project*. Sacramento, CA. Prepared by EDAW. Sacramento, CA. May 2008.

Sacramento Region Water Forum. 2008b. *Cultural Resources Inventory and Site Assessment for the American River Spawning Gravel Augmentation Project*. Sacramento, CA. Prepared by EDAW. Sacramento, CA. May 2008.

Sacramento Region Water Forum. 2008c. *Preliminary Delineation of Waters of the United States, Including Wetlands, for the American River Gravel Augmentation Project*. Sacramento, CA. Prepared by EDAW. Sacramento, CA. May 2008

Salinas, 2004. Salinas, Julio. Staff toxicologist. Office of Health Hazard Assessment, Sacramento, CA. August 3, 2004—telephone conversation with Kurt Legleiter of EDAW regarding exposure period for determining health risk.

Sherer, Steve, 2008. Memorandum. U.S. Bureau of Reclamation Regional Geologist, March 24, 2008.

SMAQMD, 2004. Sacramento Metropolitan Air Quality Management District (SMAQMD). 2004. Guide to Air Quality Assessment in Sacramento County. Sacramento, CA.

Surface Water Resources, Inc. 2001. Initial Fisheries and In-Stream Habitat Management and Restoration Plan for the Lower American River. October 31, 2001.

Titus, Rob. 2007. “Grandtab” spread sheet maintained by Rob Titus, California Department of Fish and Game.

U. S. Army Corp of Engineers, Sacramento Area Flood Control Agency, and State of California Reclamation Board. 2002. *American River Watershed, California Long-Term Study, Final Supplemental Plan Formulation Report / Environmental Impact Statement / Environmental Impact Report*. Sacramento, CA. State Clearinghouse Number: 2000092051.

U. S. Bureau of Reclamation, 1987. *Final Environmental Assessment, Mississippi Bar Mining and Recreation Area, Auburn-Folsom South Unit, Central Valley Project, California*. Mid-Pacific Region, Sacramento, California. July 1987.

U. S. Fish and Wildlife Service, 2006. Letter from John Icanberry, Fish and Wildlife Service, to California Department of Fish and Game and California Department of Water Resources. April 2006.

U.S. Fish and Wildlife Service, 1999. *Conservation Guidelines for the Valley Elderberry Longhorn Beetle*. July 9, 1999.

Wheaton, J.M., Pasternack, G. B., and Merz, J.E. 2004. Spawning habitat rehabilitation – I. Conceptual Approach & Methods. *International Journal of River Basin Management* 2:1:3-20.

Salinas, 2004. Salinas, Julio. Staff toxicologist. Office of Health Hazard Assessment, Sacramento, CA. August 3, 2004—telephone conversation with Kurt Legleiter of EDAW regarding exposure period for determining health risk.

Zhu and Hinds, 2004. Zhu, Yifang, W.C. Hinds, S.Kim, and S. Shen. 2002. Study of Ultrafine Particles Near a Major Highway with Heavy-duty Diesel Traffic. *Atmospheric Environment* 36:4323-4335.